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ABSTRACT

This report provides research-based answers to questions facing families of young, gifted children. Questions include: (1) "what does "giftedness" mean in a very young child?"; (2) "how does one know whether a child is gifted?"; (3) "should my young child be tested?"; (4) "how do adults promote the development of gifted children?"; (5) "does a gifted child need a special school, special lessons, or special equipment?"; (6) "what other aspects of development need attention?"; (7) "what about friends and playmates?"; (8) "how do ethnicity and gender relate to giftedness?"; (9) "will precocious young children remain gifted in the long run?"; (10) "when should my child enter elementary school?"; and (11) "where can help be found?" The report finds that the home environment is a strong influence and that parents of gifted children make an extra investment in reading to and playing with their children, enriching their experience, and helping them focus on potential opportunities for learning. Responsive parenting calls for creating an optimal match for children among their readiness, their pace of development, and their environments. A list of 16 books for parents and teachers, 11 other resources, and 3 organizations is included. (Contains approximately 120 references.) (JDD)

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Parenting the Very Young, Gifted Child

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University of Washington
Seattle, Washington

November 1993
Number 9308

Parenting
RESEARCH-BASED DECISION MAKING SERIES

THE NATIONAL RESEARCH CENTER ON THE GIFTED AND TALENTED

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Dr. Nancy M. Robinson, a developmental and child clinical psychologist, is Professor of Psychiatry and Behavioral Sciences and Adjunct Professor of Psychology and of Educational Psychology at the University of Washington. Although she was known for thirty years for her work in the field of mental retardation, she has also had a strong interest in gifted children since graduate-student days at Stanford University, working with Lewis Terman's protegee, Maud A. Merrill. Since 1981, she has been director of what is now known as the Halbert Robinson Center for the Study of Capable Youth, a center her late husband founded at the University of Washington in 1975 targeting issues related to giftedness in childhood. In recent years, she and her colleagues have focused on precocious verbal and mathematical development during early childhood, family issues, and the effects of marked academic acceleration of very bright adolescents.

Parenting the Very Young, Gifted Child

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ABSTRACT

This report provides research-based answers to questions facing families of young, gifted children, questions often asked of preschool teachers, physicians, psychologists, and other professionals who deal with young children. Unfortunately, the database about these children is sparse and often inconclusive. The most consistent findings point to the strong influence of the home and to the extra investment parents of gifted children make, not so much in securing outside classes, but in reading to and playing with their children, enriching their experience, and helping them focus on potential opportunities for learning. Psychological testing is advised only in special circumstances; parents can, in fact, describe their children's development rather accurately. Their descriptions provide the best basis for responsive parenting, which includes securing and creating an *optimal match* for children among their readiness, their pace of development, and their environments.

Parenting the Very Young, Gifted Child

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EXECUTIVE SUMMARY

Confronting children whose development is charging rapidly ahead can be surprisingly disconcerting to their parents, despite the pleasures they bring. Many responsible parents feel quite unprepared to cope with the challenge of children who violate developmental expectations. This report provides research-based answers to questions facing families of young, gifted children, questions they often ask of preschool teachers, physicians, psychologists, and other professionals who deal with young children whose development is advanced.

Despite the significance and urgency of the questions families raise, the research dealing with young gifted children, those approximately ages five years and under, is rather sparse. Much of it is retrospective, describing the early years of eminent historical figures, mostly males, who lived in times different from our own (Albert, 1980; Ochse, 1990; Radford, 1990).

What Does "Giftedness" Mean in a Very Young Child?

There is no real agreement on the definition of *giftedness* at any age (Sternberg & Davidson, 1986), but giftedness in young children relates primarily to their *precocity*, their rapid rate of development in one or more valued domains. Although gifted young children are often, but not always, more curious and alert, more aware and in control of their own thinking, more eager for a challenge than their agemates, no one has yet isolated a "giftedness factor" other than their precocity that sets them apart from other children (Jackson & Butterfield, 1986). As a rule of thumb, children with an ability or abilities ahead of their age peers by at least one-fourth to one-half their age (e.g., a four-year-old who is a year or two ahead) may be considered "gifted" in one or more areas.

For giftedness to be expressed productively, a high level of ability is, of course, required but by itself is not enough (Renzulli, 1978). Two other essential ingredients of high attainment are motivation (called by Renzulli, *task commitment*) and creativity, or the willingness to try out a novel idea or perspective. Unless children are committed to doing their best, their talent may plateau or even disappear. And without a willing and creative spirit, the talented child may become a carrier of, but not a contributor to, culture and knowledge.

Giftedness has different meanings when applied to adults and children. Gifted adults have demonstrated actual accomplishments and expertise; gifted children show promise. Seldom do we encounter preschool-age *prodigies*, whose actual accomplishments would be impressive in an adult (Feldman, 1986). In very young children, giftedness is important to recognize because, to persist, it needs nurturing and because gifted children are at risk for debilitating boredom, frustration, and depression if their needs for challenge are unmet. What is important, for children of any age and any level of ability, is to achieve an *optimal match* among their environments, their readiness, and their pace of development.

And yet, it is essential to keep in mind that there are broad differences within any group of gifted children (McGuffog, Feiring, & Lewis, 1987), differences just as broad as in any other group of children. Gifted children differ not only in the areas and levels of their special competence, but in their personalities and temperaments, the kinds of families they come from, and almost every other way that children can differ. If parents bring up children in the ways that feel comfortable, they stand a good chance of bringing up children who are healthy and fulfilled, whom they like, and who like them. Nothing in this report should be taken to contradict that truth.

How Does One Know Whether a Child is Gifted?

A knowledge of normal child development is essential in recognizing precocity in young children. Parents are, for the most part, rather accurate in recognizing giftedness in their children, if they have at least rough developmental standards by which to judge (Robinson & Robinson, 1992). Investigators (Louis & Lewis, 1992; Silverman, Chitwood, & Waters, 1986) have found that parents of children who actually are advanced in reasoning tend to mention the following: impressive long-term and short-term memory; long attention span; early emerging and extensive vocabulary; a high degree of imagination; insatiable curiosity; preference for older playmates; and thinking about abstract concepts. Straightforward, specific knowledge (e.g., about the alphabet or body parts) is not by itself a signal of giftedness (Louis & Lewis, 1992).

Adults, of course, use signs related to the child's age and domain of advancement. It is easiest and most reliable to spot precocity in a skill that is just emerging. For example, parents can accurately identify toddlers with precocious language (Robinson, Dale, & Landesman, 1990; Robinson & Robinson, 1992) and precocious readers at kindergarten age and below (Jackson, 1992).

Precocious reasoning clearly characterizes young, gifted children. They learn more quickly, remember with less effort, reason with advanced skills, generalize (make connections) more readily, and are better observers of their own thinking than other children of their chronological age, in all these characteristics tending to resemble children of their *mental age* (Spitz, 1985). At the same time, their experience is usually more limited and they may, by intuition or logic, leap to erroneous conclusions that make others doubt that they are "really all that bright."

At about age 6 years, a number of interesting shifts ordinarily take place in the cognitive skills and perspectives of normally developing children. They become much more systematic in their understanding of cause and effect, able to generalize and apply more broadly what were before encapsulated islets of understanding, able to grasp more complex classification systems, and so on. They are also *metacognitively* more mature, more self-aware, and better at managing their own learning and problem-solving. In all of these areas, cognitively gifted younger children are also advanced, not necessarily so strikingly by age 4, but more often by age 5, and they catch on rather swiftly (Brown, 1973; Kanevsky, 1992; Lempers, Block, Scott, & Draper, 1987; Planche, 1985; Shigaki & Wolf, 1982; Zha, 1984).

Unfortunately, about the same time, they begin to care more about the rules of behavior and game-playing, and lose some of the magical, intuitive qualities of the preschooler. Moreover, some aspects of maturity can be rather painful. Just as their interests are more mature than those of their agemates, so are their fears (Klene, 1988), and they may discover concepts such as death and its irreversibility, or infinity, before

emotionally they can deal with the implications. Discovering concepts of success and failure, they may become cautious about new activities. Becoming able to see the world from others' perspectives, they become sensitive to one child's hurting another or, on a larger scale, of prejudice, violence, and inhumanity.

Should My Child Be Tested?

Parents who question whether their child's development is actually ahead of norms can get information from sources other than psychometric testing. A number of books can be helpful (see list at end of report); the informal observations of professionals who work with young children can be useful; and parents can profitably spend some time themselves watching groups of their child's agemates.

Developmental assessment by a psychologist may be considered under special circumstances, but when a young child is being assessed, there are many pitfalls. Test scores earned by young children tend to be unstable even in the short run, affected by hunger, fatigue, minor illness, or anxiety, and under such conditions, even very bright young children tend to revert to crankiness and "acting their age" (Kanevsky, 1992). Children still in the "pre-operational" stage (see Flavell, 1963) are likely to be intuitive, hedonistic, and egocentric—and, therefore, inconsistent about using their most mature strategies.

Over the long run, there are individual differences in children's patterns of development, difficult to predict but sometimes linked to family issues (Honzik, Macfarlane, & Allen, 1948) and personal characteristics, such as the child's degree of energy, curiosity, assertiveness, social skills, and social preferences (Harper & Huie, 1987; Kohn & Rosman, 1972; Sontag, Baker, & Nelson, 1958). From preschool to adolescence, changes also tend to reflect family education and occupation (Bradway & Robinson, 1961).

Testing should, therefore, be approached very conservatively, and should be directed at specific questions, such as explanations for unevenness in development or school applications. If testing is sought, it should be carried out by a licensed or certified psychologist accustomed to testing preschoolers and gifted children, and the instrument should include some questions that will be too difficult, in order to give an accurate picture of the best the child can accomplish. Finally, the tester's observations in this standardized situation should carry as much weight as the scores derived.

How Do Adults Promote the Development of Gifted Children?

Although there are many exceptions, children identified as gifted tend to come from homes that are relatively rich in resources: psychological and educational resources as well as socioeconomic ones. This fact has been documented over and over by investigators (e.g., Bloom, 1985; Terman, 1926), but it does not tell what parents do that makes a difference in their children's lives. Economic factors *per se* are surely much less important than the organization and effective functioning of the home, the degree to which parents are responsive to children, and the opportunities for affectionate support and for stimulation and exploration that a favorable home provides.

Parenting gifted children takes time in activities such as reading, playing, making up rhymes and songs, and going to interesting places (Karnes, Shwedel, & Steinberg,

1984; Thomas, 1984). Furthermore, gifted preschoolers acquire many of their advanced skills at problem-solving by picking up cues from their parents, who encourage *metacognitive strategies* (self-monitoring, self-management of problem-solving) by setting up questions and problems but letting the children derive their own solutions, rather than giving them the answers (Moss, 1990, 1992; Moss & Strayer, 1990). Some effective parenting strategies for bright young children are deliberate and planned while others are more responsive and incidental, but important ingredients are stimulation, playfulness, child-centeredness, and sensitivity as to when to move on to a new idea (Fowler, 1981).

Children build ideas and concepts from their experiences, and gifted children profit from broad exposure. Many quite suitable opportunities are not at all costly and are simply exploited opportunities of daily living or easily accessible points of interest such as a construction site, a pet store, or a local airport. Children need help in focusing on what is most potentially interesting, and acquire vocabulary and concepts by talking before, during, and after the experience. Even television watching can be made much more useful if adults accompany children and talk about what they see (Abelman, 1992).

Reading to children is something of an art in itself, and involves much more than simply reading what is written. Parents are urged to consult Jackson and Roller (1993), *Reading With Young Children*, another publication in this series.

Finally, children must be recognized as active partners in the learning process, powerfully shaping their environments (Plomin & Daniels, 1987). Children's early interests in being talked to and read to (Dale, Robinson, & Crain-Thoreson, under review; Thomas, 1984) encourage their parents to talk and read to them, and their questions make teachers of their caregivers. Parenting any child is a two-way street!

Does a Gifted Child Need a Special School? Special Lessons? Special Equipment?

Special Programs. Many special programs have been developed for young, gifted children, most of them child-centered and providing wholesome opportunities for association with children who are age and mental peers. The problem is that there is no research evidence one way or the other about the programs' effectiveness. Few studies have been conducted with appropriate comparison groups, although at least short-term gains in academic skills, self-esteem, and creativity have been reported (Hanninen, 1984; Karnes, 1983 a,b). One study using a suitable comparison group (Draper, Larsen, Harris, & Robinson, 1992) did, in fact, not report advantages for the gifted enrollees. Despite a wealth of positive anecdotal evidence about the joys of children enrolled in preschools for gifted children, parents certainly need not feel discouraged if no such program is available or affordable.

Teaching Reading and Math. Generally speaking, the most effective ways to encourage a solid foundation for reading and math skills are not direct but indirect. Reading skills, for example, emerge from those rich contexts that include conversation, vocabulary, careful listening, watching parents who themselves read for pleasure, and sharing the delights of being read to. Before going to school, bright children need to be able to recognize letters and associate them with specific sounds, and they need to know something about books (where you start, that print goes from left to right and is segmented into words and sentences, etc.), but they gain this knowledge through playing rhyming games, learning to print their own names and favorite words, watching "Sesame Street"

and similar children's television programs, conversing about store logos, and engaging in casual interchange while being read to (Jackson and Roller, 1993).

Similarly, with respect to numbers, bright children need some rudimentary knowledge before they go to school, but they do not need "number facts" or paper-and-pencil conventions. It is, again, in everyday living activities (such as setting the table or reading a thermometer) that such knowledge emerges.

Lessons and Skills. Young children often enjoy informal group instruction in any of a variety of activities such as crafts, movement patterns (dance, gymnastics, swimming), or music, but two cautions are in order. First, parents must take care not to overschedule their children and themselves, or to become too invested in whether the child does well. Second, even for children who will eventually reach high levels of performance, a teacher who begins gently and playfully, someone who likes children, is an effective first teacher (Bloom, 1985).

To express a creative spirit, people need skills to match their ideas. Young children have more potential for using tools than we give them credit for in this country. A middle road is probably best.

Home Computers and Electronic Toys. The best toys and tools for young children, from blocks and dolls to computers, are those that are suitable for multiple uses and inventive play, and are applicable at increasing levels of complexity to match the child's leaps in development. Many electronic toys do not meet this description and probably do not justify the expense. Computers present many more attractive possibilities, but their expense is very high in most family budgets. If a purchase is made, it is wise to invest in a color monitor, a mouse, and enough power to run programs that demand considerable memory capacity; in most cases, a system compatible with that used by the elementary school the child will attend; and potential expansion to incorporate CD-ROM (compact disk) technology. Software should be purchased carefully to provide flexibility, imagination, and room for growth. (See Resources list at back for a source of reviews.) There is, however, absolutely no research demonstrating (or, on the contrary, demolishing) the idea that gifted children profit in the long run from introduction to a computer during the preschool years. Parents are encouraged to weigh priorities thoughtfully.

What Other Aspects of Development Need Attention?

Very young, gifted children are, of course, children first and gifted second. Most of what they need from their parents and teachers is very much the same as it would be if they were not gifted. There are, however, a few areas in which giftedness seems to have a special impact.

Discipline or Debate. Little studied in gifted children but of much concern to parents is how best to provide the structure and consistency children need while at the same time encouraging their independence of thinking and reasoning. Many parents who want to do their best allow themselves to be drawn into endless debates with their verbally adept children. The most effective families, in terms of child outcomes, are those in which *authoritative parenting* is the mode (Baumrind, 1971). Authoritative parents establish and maintain rules in rational and benevolent ways, valuing the growth of the children within family structure that, while not inflexible, clearly and consistently communicates parental expectations and leadership. In such families, parents are neither rigidly *authoritarian* or unduly *permissive*.

Achievement motivation. If giftedness is to be expressed and developed, there must be high motivation to achieve, a definite commitment and investment on the part of the child (Renzulli, 1978). Such commitment is not to be expected during early childhood (Bloom, 1985), but precursors can be seen in parents' encouragement of initiative and independence (Freeburg & Payne, 1967; Geppert & Kuster, 1983; Terman & Oden, 1947). Achievement motivation derives from the chance to master new challenges with autonomy (Dweck & Elliott, 1983; Henderson & Dweck, 1990). Parents who involve their children informally in shared family activities and gently instill self-discipline, the importance of doing one's best, and the satisfaction of accomplishment, are likely to have children who carry on the tradition.

Self-esteem. Although the emotional development of gifted school-aged children has often been studied, the same is not true of younger children (Janos & Robinson, 1985; Robinson & Noble, 1991). Most of the evidence points toward healthy adjustment, on average, but parents are rightly concerned about the pitfalls their children face if they are chronically underchallenged and fail to develop skills of coping with anything but raging success.

Most children hold to what has been called by Carol Dweck and her colleagues (Dweck & Elliott, 1983) an *incremental theory of intelligence*, that is, the harder you work, the smarter you become. Older children and adults, especially very bright ones, may develop an *entity theory of intelligence* as something one "has" or "doesn't have," with investment in hard work indicating that one "doesn't." The most realistic and wholesome point of view incorporates both sides of the issue but leans toward an incremental theory, a "use it or lose it" philosophy.

Perfectionism. Young gifted children have frequently been described in individual case studies as *perfectionistic*, that is, self-critical, setting high standards for their own performance, and monitoring their attainment according to what others think (Whitmore, 1980). What is good and necessary for ultimate high achievement—setting high but attainable goals for oneself—can be either a positive or negative force. A delight in mastering challenging tasks may well be the secret of success, and this quality in the very young is predictive of later high ability (Birns & Golden, 1972). The depressive aspects of perfectionism, on the other hand, come from feeling that one cannot measure up to the expectations of others (Hewitt & Flett, 1990) and not, as we often assume, from feeling that one's own goals are unattainable.

Adults can help by serving as models, sharing pleasure in attaining their own goals, learning from those attempts that don't pay off, and helping children to formulate goals as progress toward, rather than achievement of, a first-rate performance.

Creativity and risk-taking. All little children are "creative" in the sense that they see the world in fresh ways, but even in early childhood, children differ markedly in the cautiousness with which they approach problems. For example, verbally precocious toddlers differ from one another in their willingness to "take flyers" in using language (Crain-Thoreson & Dale, in press). Although there is little research on this topic, it does appear that there is some stability in original thinking during early childhood (Moore & Sawyers, 1987), a characteristic relatively independent of IQ (Moran, Milgram, Sawyers, & Fu, 1983). Because "risk-taking" involves experimentation, with outcomes inevitably including failures as well as successes, nurturing adults refrain from criticism and help children see their attempts as a succession of valuable trials, each leading informatively to the next (Lovecky, 1992).

What About Friends and Playmates?

Gifted children frequently opt for older friends who are mental-age peers (Robinson & Noble, 1991; Terman, 1926) or younger ones who will do their bidding. There is some question about whether gifted young children actually behave like older children (Roedell, Jackson, & Robinson, 1980), although most observers have concluded that they do (Abroms & Gollin, 1980; Barnett & Fiscella, 1985; Kitano, 1985). There is no question, however, that their social understanding is advanced (Roedell et al., 1980), and many are very unhappy in settings where they have no mental peers. As a rule of thumb, parents will want to provide either a group setting where their gifted children can have the company of gifted peers of their own mental and calendar ages, or a variety of settings in which they can choose to associate with children of different ages for different activities.

How Do Ethnicity and Gender Relate to Giftedness?

Sadly, we have very little information other than anecdotes about how group differences such as ethnicity, bilingualism, or gender interact with children's high ability. Of course it is clear that, regardless of ethnicity or status, families who are overwhelmingly disorganized, alienated from the educational system, and/or stressed by economic and personal issues, have a hard time providing consistency and finding extra energy to devote to their children. Such families are, therefore, less likely to raise gifted children than are families who can be sensitively responsive to children's needs (Clarke-Stewart, 1973). Although investigators are concerned not to overlook any gifted children because their families are culturally different, isolated, or poor, with few exceptions (e.g., Karnes, 1983), no one has looked at preschool gifted children in this way.

The same limitations surround issues of the origins of gender differences in gifted boys and girls. Some such differences, for example, in handling visually rotated figures, can be seen quite early in gifted children (Stillman, 1982), and in nongifted toddlers, sex differences in toy choice and play patterns emerge very early (Jacklin & Maccoby, 1978; Smith & Daglish, 1977). Not all of these can be attributed to parental behavior (Lytton & Romney, 1991). Certainly there are social pressures on adolescent girls to hide their brightness, but there are also many anecdotes about gifted preschool girls who are ready to hide their talents. Girls (and boys, too) need their parents' encouragement to see themselves as competent and independent, as do children from all walks of society.

Will Precocious Young Children Remain Gifted in the Long Run?

The course of development is not highly predictable. Indeed, the earlier the prediction, the longer-term the prediction, and the higher the scores to begin with, the less stable the estimate is likely to be (McCall, Appelbaum, & Hogarty, 1973). Long-term predictions for young, gifted children lose on all three counts.

The few short-term studies that have followed gifted children suggest that when children are selected by early test scores alone, infants and toddlers with high scores do not seem to maintain their advantage (Shapiro et al., 1989; Willerman & Fiedler, 1977). When, however, parents' descriptions and early assessments agree, the picture for most children is a positive one. For example, when parents identify very young children whom they see as advanced in reasoning, the children tend to attain high test scores and to maintain considerable advantage over a period of years (Robinson & Robinson, 1992),

although perhaps not so dramatically as when first seen. Similarly, children who begin to read early (usually on their own initiative) tend to maintain an advantage through the elementary school years (Jackson, 1992). Nevertheless, parents' most reliable information is about children's current characteristics and needs, so the priority focus should be on the present. Indeed, if the present is well taken care of—if children's interest, motivation, and intellectual courage remain high—that is the best insurance for the future.

When Should My Child Start School?

Early entry to preschool, kindergarten, and/or first grade is one way to achieve an optimal educational match for a young child. Although it is wise to be conservative about such decisions, there is plenty of evidence that bright children carefully selected for early entrance tend to do very well, both academically and socially, over the entire era of their education (Robinson & Weimer, 1991). Ordinarily, children should have a birthdate no more than a few months past the ordinary cut-off date, and should have average to above-average maturity and skills in comparison to the classmates they will have. They should show strong advancement in general intelligence, possess fine motor skills enabling them to keep up with the class, and be relatively mature in social and emotional characteristics. To enter first grade early, they should also be well on their way to reading and calculating. Local conditions, attitudes of school personnel, and alternative options also need to be taken into account in this serious decision.

Where Can I Turn for Help?

Every community offers potential resources, but some, of course, are richer than others. Large urban areas may offer private preschools or community-college groups for gifted preschool children, as well as academically challenging public and private kindergartens; institutions such as museums, zoos, and aquariums; specialized classes; trained professionals; and parenting classes, support groups, and organizations. Even small communities offer some resources such as playgroups for older children, sympathetic librarians, neighborhood music teachers, and native foreign-language speakers. Even a handful of families can provide mutual support and can pool resources on behalf of their children. Most importantly, the talents and interests within the family can contribute in significant ways to the present and future life of the young, gifted child (Bloom, 1985).

A Final Word

Parenting the young, gifted child is both a joy and a challenge. Families need to be prepared to deal with their own, usually intermittent, wish that their children were "average," with the fact that the ordinary timetables don't fit their children, with friends who berate them for "pushing" their children, and, most of all, with setting family priorities so that the gifted children do not become disproportionately privileged or a source of family stress. Finally, parents of children who are different in any way need to accept the truth that all choices are compromises, and that the parent's job is to try to optimize the balance of advantages to disadvantages. Doing the reasonable best you can, and giving yourself permission to have fun with your young child, are plenty good enough.

GUIDELINES FOR PARENTS OF YOUNG, GIFTED CHILDREN

Guideline 1: Gifted children show one or more abilities ahead of their peers by at least one-fourth their age. Although parents often describe them as having excellent memories, vocabularies, attention spans, imagination, and curiosity, no unique characteristic or "giftedness factor" has been identified. In metacognition, the ability to observe and manage one's own thinking, however, they may be especially advanced.

Research support: Gifted children are, in the areas of their talents and interests, more like older children than age-peers. They prefer older friends, have fears and make jokes like older children. In problem-solving, however, young gifted children act more like older gifted children (e.g., pacing themselves to maintain a challenge) than like older children of average mental abilities.

Guideline 2: Parenting gifted young children is labor-intensive.

Research support: Parents report spending more time with gifted young children in reading, playing, making up rhymes and songs, and going to interesting places than do parents of non-gifted young children.

Guideline 3: Some roots of high motivation and willingness to take creative risks can be found during early childhood.

Research support: Precursors of continuing motivation and creativity can be seen in parents' encouragement of initiative, independence, attempting the new or difficult, and seeing each try's outcome as a step to the next.

Guideline 4: We have no strong evidence that special preschools, early teaching, or computer technology significantly advance the development of gifted children.

Research support (or its absence): Rigorous research has not been undertaken that could demonstrate significant long-term effects of such early programs. There is, however, abundant observational evidence that gifted young children are happier with an *optimal match* between their opportunities and their rapid pace of development.

Guideline 5: Gifted children clearly identified during the preschool era tend to stay ahead of other children even if not quite so dramatically as before.

Research support: Longitudinal studies of preschoolers identified for their early-emerging abilities (not just high test scores) find that they do maintain long-range momentum, even though it may not be as dramatic as when first seen. Early entrance to school is, therefore, one way to meet the needs of some gifted children.

Guideline 6: Gifted children are at least as varied as any other group of children.

Research support: Gifted children differ in the patterns of their abilities and skills, as well as their temperaments, personalities, and backgrounds.

References

Abelman, R. (1992). *Some children under some conditions: TV and the high potential kid.* Research-Based Decision Making Series, #9205. Storrs, CT: The National Research Center on the Gifted and Talented.

Abroms, K.I. (1982b). The gifted infant: Tantalizing behaviors and provocative correlates. *Journal of the Division for Early Childhood, 5*, 3-18.

Abroms, K.I., & Gollin, J. (1980). Developmental study of gifted preschool children and measures of psychosocial giftedness. *Exceptional Children, 46*, 334-341.

Albert, R.S. (1980). Family positions and the attainment of eminence: A study of special family positions and special family experiences. *Gifted Child Quarterly, 24*, 87-95.

Barnett, L., & Fiscella, J. (1985). A child by any other name: A comparison of the playfulness of gifted and nongifted children. *Gifted Child Quarterly, 29*, 61-66.

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs, 4* (1, Part 2.)

Birns, B., & Golden, M. (1972). Prediction of intellectual performance at 3 years from infant tests and personality measures. *Merrill Palmer Quarterly, 18*, 53-58.

Bloom, B.S. (Ed.). (1985). *Developing talent in young people.* New York: Ballantine.

Bradway, K.P., & Robinson, N.M. (1961). Significant IQ changes in twenty-five years: A follow-up. *Journal of Educational Psychology, 53*, 1-14.

Brown, A.L. (1973). Conservation of number and continuous quantity in normal, bright, and retarded children. *Child Development, 44*, 376-379.

Clarke-Stewart, K.A. (1973). Interactions between mothers and their young children: Characteristics and consequences. *Monographs of the Society for Research in Child Development, 38* (6-7, Serial No. 153).

Crain-Thoreson, C., & Dale, P.S. (1992). Do early talkers become early readers? Linguistic precocity, preschool language, and emergent literacy. *Developmental Psychology, 28*, 421-429.

Crain-Thoreson, C., & Dale, P.S. (in press). Pronoun reversals: Who, when, and why? *Journal of Child Language.*

Dale, P.S., Robinson, N.M., & Crain-Thoreson, C. (under review). Follow-up of verbally precocious children: A final report.

Draper, T.W., Larsen, J.M., Harris, J., & Robinson, C.C. (1992, March). *Interrelationships between preschool attendance, parent education, parental expectations and behaviors, and child behaviors and attributes in high IQ children in an advantaged subculture.* Paper presented at the Esther Katz Rosen Symposium on the Psychological Development of Gifted Children, Lawrence, KS.

Dweck, C.S., & Elliott, E.S. (1983). Achievement motivation. In E.M. Hetherington (Ed.), *Handbook of child psychology: Socialization, personality, and social development* (Vol. 4, 4th ed., pp. 343-391). New York: Wiley.

Feldman, D.H., with Goldsmith, L. (1986). *Nature's gambit: Child prodigies and the development of human potential.* New York: Basic Books.

Flavell, J.H. (1963). *The developmental theory of Jean Piaget.* Princeton, NJ: Van Nostrand.

Fowler, W. (1981). Case studies of cognitive precocity: The role of exogeneous and endogenous stimulation in early mental development. *Journal of Applied Developmental Psychology, 2,* 319-367.

Freeburg, N.E., & Payne, D.T. (1967). Parental influence on cognitive development in early childhood. *Child Development, 38,* 65-87.

Geppert, U., & Kuster, U. (1983). The emergence of "wanting to do it oneself": A precursor of achievement motivation. *International Journal of Behavioral Development, 6,* 355-365.

Hanninen, G.E. (1984). Effectiveness of a preschool program for the gifted and talented. *Journal for the Education of the Gifted, 7,* 192-204.

Harper, L.V., & Huie, K.S. (1987). Relations among preschool children's adult and peer contacts and later academic achievement. *Child Development, 58,* 1051-1065.

Henderson, V.L., & Dweck, C.S. (1990). Motivation and achievement. In S.S. Feldman & G.R. Elliot (Eds.), *At the threshold: The developing adolescent.* Cambridge, MA: Harvard University Press.

Hewitt, P.L., & Flett, G.L. (1990). Perfectionism and depression: A multidimensional analysis. *Journal of Social Behavior and Personality, 5,* 423-438.

Honzik, M.P., Macfarlane, J.W., & Allen, L. (1948). The stability of mental test performance between two and eighteen years. *Journal of Experimental Education, 17,* 309-324.

Jacklin, C.N., & Maccoby, E.E. (1978). Social behavior at 33 months in same-sex and mixed-sex dyads. *Child Development, 49,* 557-569.

Jackson, N.E. (1992). Precocious reading of English: Origins, structure, and predictive significance. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 171-203). Norwood, NJ: Ablex.

Jackson, N.E., & Butterfield, E.C. (1986). A conception of giftedness designed to promote research. In R.J. Sternberg & J.E. Davidson (Eds.). *Conceptions of giftedness* (pp. 151-181). Cambridge, UK: Cambridge University Press.

Jackson, N.E., & Roller, C.M. (1993). *Reading with young children.* Research-Based Decision Making Series #9302. Storrs, CT: The National Research Center on the Gifted and Talented.

Janos, P.M., & Robinson, N.M. (1985). Psychosocial development in intellectually gifted children. In F.D. Horowitz & M. O'Brien (Eds.). *The gifted and talented: A developmental perspective* (pp. 149-195). Washington, DC: American Psychological Association.

Kanevsky, L. (1992). The learning game. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 204-241). Norwood, NJ: Ablex.

Karnes, M.B. (Ed.). (1983). *The underserved: Our young gifted children.* Reston, VA: Council for Exceptional Children.

Karnes, M.B., Shwedel, A.M., & Lewis, G.F. (1983a). Short-term effects of early programming for the young gifted handicapped child. *Exceptional Children, 50,* 103-109.

Karnes, M.B., Shwedel, A.M., & Lewis, G.F. (1983b). Long-term effects of early programming for the gifted/talented handicapped. *Journal for the Education of the Gifted, 6,* 266-278.

Karnes, M.B., Shwedel, A.M., & Steinberg, D. (1984). Styles of parenting among parents of young gifted children. *Roeper Review, 6,* 232-235.

Kitano, M.K. (1985). Ethnography of a preschool for the gifted: What gifted young children actually do. *Gifted Child Quarterly, 29,* 67-71.

Klene, R. (1988, August). *The occurrence of fears in gifted children.* Paper presented at the annual meeting of the American Psychological Association, Atlanta, GA.

Kohn, M., & Rosman, B.L. (1972). Relationship of preschool social-emotional functioning to later intellectual achievement. *Developmental Psychology, 6,* 445-452.

Lempers, J., Block, L., Scott, M., & Draper, D. (1987). The relationship between psychometric brightness and cognitive-developmental precocity in gifted preschoolers. *Merrill Palmer Quarterly, 33,* 489-503.

Louis, B., & Lewis, M. (1992). Parental beliefs about giftedness in young children and their relation to actual ability level. *Gifted Child Quarterly, 36,* 27-31.

Lovecky, D.V. (1992). Exploring social and emotional aspects of giftedness in children. *Roeper Review, 15,* 18-25.

Lytton, H., & Romney, D.M. (1991). Parents' differential socialization of boys and girls: A meta-analysis. *Psychological Bulletin, 109,* 267-296.

McCall, R.B., Appelbaum, M.I., & Hogarty, P.S. (1973). Developmental changes in mental performance. *Monographs of the Society for Research in Child Development, 38* (Serial No. 150).

Moore, L.C., & Sawyers, J.K. (1987). The stability of original thinking in young children. *Gifted Child Quarterly, 31,* 126-129.

Moss, E. (1990). Social interaction and metacognitive development in gifted preschoolers. *Gifted Child Quarterly, 34,* 16-20.

Moss, E. (1992). Early interactions and metacognitive development of gifted preschoolers. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 278-318). Norwood, NJ: Ablex.

Moss, E., & Strayer, F.F. (1990). Interactive problem-solving of gifted and non-gifted preschoolers with their mothers. *International Journal of Behavioral Development, 13*, 177-197.

Ochse, R. (1990). *Before the gates of excellence: The determinants of creative genius.* Cambridge, England: Cambridge University Press.

Planche, P. (1985). Modalities fonctionnelles et conduites de resolution de problems chez des enfents precocious de cinq, six et sept ans d'age chronologique. (Functional modalities and problem solving in gifted children five, six, and seven years old.) *Archives de Psychologie, 53*, 411-415.

Plomin, R., & Daniels, D. (1987). Why are children within the family so different from each other? *The Brain and Behavioral Sciences, 10*, 1-16.

Radford, J. (1990). *Child prodigies and exceptional early achievers.* New York: Free Press.

Renzulli, J.S. (1978). What makes giftedness? Reexamining a definition. *Phi Delta Kappan, 60*, 18-24.

Robinson, N.M., Dale, P.S., & Landesman, S. (1990). Validity of Stanford-Binet IV with linguistically precocious toddlers. *Intelligence, 14*, 173-186.

Robinson, N.M., & Noble, K.D. (1991). Social-emotional development and adjustment of gifted children. In M.G. Wang, M.C. Reynolds, & H.J. Walberg (Eds.), *Handbook of special education: Research and practice*, Vol. 4 (pp. 23-36). New York: Pergamon.

Robinson, N.M., & Robinson, H.B. (1992). The use of standardized tests with young gifted children. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 141-170). Norwood, NJ: Ablex.

Robinson, N.M., & Weimer, L.J. (1991). Selection of candidates for early admission to kindergarten and first grade. In W.T. Southern & E.D. Jones (Eds.), *The academic acceleration of gifted children* (pp. 29-50). New York: Teachers College Press.

Roedell, W.C., Jackson, N.E., & Robinson, H.B. (1980). *Gifted young children.* New York: Teachers College Press.

Shapiro, B.K., Palmer, F.B., Antell, S.E., Bilker, S., Ross, A., & Capute, A.J. (1989). Giftedness: Can it be predicted in infancy? *Clinical Pediatrics, 28*, 205-209.

Shigaki, I.S., & Wolf, W. (1982). Comparison of class and conditional logic abilities of gifted and normal children. *Child Study Journal, 12*, 161-170.

Silverman, L.K., Chitwood, D.G., & Waters, J.L. (1986). Young gifted children: Can parents identify giftedness? *Topics in Early Childhood Special Education, 6*(1), 23-38.

Smith, P.K., & Daglish, L. (1977). Sex differences in parent and infant behavior in the home. *Child Development, 48*, 1250-1254.

Sontag, L.W., Baker, C.T., & Nelson, V.L. (1958). Mental growth and personality development: A longitudinal study. *Monographs of the Society for Research in Child Development, 23* (2, Serial No. 68).

Spitz, H.H. (1985). Extreme decalage: The task by intelligence interaction. In E.D. Neimark, R. De Lisi, & J.L. Newman (Eds.), *Moderators of competence* (pp. 117-145). Hillsdale, NJ: Erlbaum.

Sternberg, R.J., & Davidson, J.E. (Eds.). *Conceptions of giftedness*. Cambridge, UK: Cambridge University Press.

Stillman, C.M. (1982). *Individual differences in language and spatial abilities among young gifted children*. Unpublished doctoral dissertation, University of Washington.

Terman, L.M. (1926). *Genetic studies of genius. Vol. I: Mental and physical traits of a thousand gifted children*. (2nd ed.). Stanford, CA: Stanford University Press.

Terman, L.M., & Oden, M.H. (1947). *Genetic studies of genius. Vol. IV: The gifted child grows up*. Stanford, CA: Stanford University Press.

Thomas, B. (1984). Early toy preferences of four-year-old readers and nonreaders. *Child Development, 55*, 424-430.

Whitmore, J.R. (1980). *Giftedness, conflict, and underachievement*. Boston: Allyn & Bacon.

Willerman, L., & Fiedler, M.F. (1974). Infant performance and intellectual precocity. *Child Development, 45*, 483-486.

Willerman, L., & Fiedler, M.F. (1977). Intellectually precocious preschool children: Early development and later intellectual accomplishments. *Journal of Genetic Psychology, 131*, 13-20.

Zha, Z. (1984). A comparative study of the analogical reasoning of 3 to 6-year-old supernormal and normal children. *Acta Psychologica Sinica, 16*, 373-382.

Resources: Books for Parents and Teachers

Abelman, R. (1992). *Some children under some conditions: TV and the high potential kid.* Storrs, CT: The National Research Center on the Gifted and Talented, The University of Connecticut. (Research-Based Decision Making Series, #9205). This summary of research includes valuable strategies for making the most of this valuable resource.

Alvino, J., and the Editors of *Gifted Children Monthly* (1985). *Parents' guide to raising a gifted child: Recognizing and developing your child's potential.* New York: Little, Brown. Probably the best single resource for ideas about parenting the school-aged gifted child, largely school-oriented but including a number of significant within-family ideas, as well as lists of materials, games, and books for children.

Ames, L.B., & Chase, J.A. (1981). *Don't push your preschooler, Rev. ed.* New York: Harper and Row. Despite the title of this book, it makes a useful distinction between trying to create a gifted child, and responding to one who is indeed a gifted learner. Many positive suggestions.

Ames, L.B., & Ilg, F. (1976-). *Your one-year-old...Your ten-to-fourteen-year-old.* New York: Dell Publishing. A series of books about children of specific ages, full of practical advice and psychological insights, with appendices on toys and books for children and books for parents.

CTY/Johns Hopkins University. *Sourcebook for parents of intellectually gifted preschool/elementary school children.* Baltimore, MD: CTY/JHU. 3400 N. Charles Street, Baltimore 21218 (410-516-8427). A collection of articles and resources, preponderantly for school-aged children but some for parents of younger children as well.

Editors of *Gifted Children Monthly* and Alvino, J. (1989). *Parents' guide to raising a gifted toddler.* New York: Little, Brown. Unfortunately, this useful book went quickly out of print, but you may find it in your library.

Jackson, N.E., & Roller, C.M. (1993). *Reading with young children.* Storrs, CT: The National Research Center on the Gifted and Talented, The University of Connecticut. (Research-Based Decision Making Series #9302).

Klein, P.S., & Tannenbaum, A. (Eds.). (1992). *To be young and gifted.* Norwood, NJ: Ablex. This book is intended for researchers, not parents, but is one of very few books that focuses on the very young, gifted child.

Robinson, N.M., & Weimer, L.J. (1991). Selection of candidates for early admission to kindergarten and first grade. In W.T. Southern & E.D. Jones (Eds.), *The academic acceleration of gifted children* (pp. 29-50). New York: Teachers College Press. A consideration of the many issues parents and professionals need to take into account in making this important decision.

Roedell, W.C. (1989). Early development of gifted children. In J.L. VanTassel-Baska & P. Olszewski-Kubilius (Eds.), *Patterns of influence on gifted learners: The home, the self, and the school* (pp. 13-28). New York: Teachers College Press.

Roedell, W.C., Jackson, N.E., & Robinson, H.B. (1980). *Gifted young children.* New York: Teachers College Press. While not new, this book covers many of the major issues about this age group.

Saunders, J., with P. Espeland (1991). *Bringing out the best (Rev.)* Minneapolis: Free Spirit Publishing. Probably the single best resource for parents of young, gifted children, including parenting issues, activities, toys, and other resources. Written engagingly. Beware, though, of the chapter on affecting brain development; it goes too far.

Sher, B.T. (1993). *Notes from a scientist. Resources and activities for gifted children: Some suggestions for parents.* Williamsburg, VA: Center for Gifted Education, The College of William and Mary. Valuable suggestions and resources for encouraging gifted children in their explorations of science.

Smutney, J.F., Veenker, K., & Veenker, S. (1989). *Your gifted child: How to recognize and develop the special talents in your child from birth to age seven.* New York: Ballantine. Full of information for parents as to how to identify advanced development and how to encourage it.

Takacs, C.A. (1986). *Enjoy your gifted child.* Syracuse, NY: Syracuse University Press. Nurturing advice on developmental and emotional areas. Its emphasis is on how to relax and enjoy life with children while keeping up with their developmental needs.

Walker, S.Y. (1991). *The survival guide for parents of gifted kids.* Minneapolis, MN: Free Spirit Publishing. Like other publications from Free Spirit, this is a lively and helpful handbook that addresses issues within the family as much as those intersecting with schools.

Note: There are some popular books by such authors as Doman, White, Engleman, and Beck which assert that, by following their planned program of activities, a child can be made more intelligent. Most have some useful ideas for stimulating activities, but the intensive programs advocated by these writers (particularly Doman) are not in the best interests of children or parents, and no scientific evidence exists for IQ-raising in young children already living in supportive families.

Other Resources

Activity Books. Gifted children tend to use up parents' and teachers' ideas at a rapid rate. There are many activity books available, some just time-wasters to be avoided, and some useful means of teaching new ideas and skills. Parents are advised to browse the library and children's bookstores. Here are two:

Boswell, J., & Barrett, R. (1990). *How to dad.* New York: Dell. Moms are welcome, too. An engaging book about teaching kids skills such as whistling and going headfirst into a pool.

Miller, K. *Things to do with toddlers and twos.* Marshfield, MA: Telshare Publishing.

Book Guides. There are so many fine books for children that guidance can be useful when going to the library or bookstore, although there is no substitute for your own "aha" when you see a book that fits you and your child. Here are some guides:

Baskin, B.H., & Harris, K.H. (1980, 1988). *Books for the gifted child.* (Vols. 1 & 2). New York: R.R. Bowker.

Chinaberry Book Service, 2780 Via Orange Way, Suite B, Spring Valley, CA 98978 (1-800-776-2242). This is a commercial catalogue of books, sensitively chosen and reviewed at some length, providing a wide spectrum of trustworthy materials for children and adults.

Halstead, J.W. (1988). *Guiding gifted readers: From preschool through high school. A handbook for parents, teachers, counselors, and librarians.* Columbus, OH: Ohio Psychology Publishing.

Lipson, E.R. (1991). *New York Times parent's guide to the best books for children, revised and updated.* New York: Times Books, Random House.

Trelease, J. (1989). *The new read-aloud handbook.* New York: Viking Penguin Books.

Software Guides. Most software catalogues are vending their own products, and are to be read judiciously.

High/Scope Buyer's Guide to Children's Software. High/Scope Press. 600 N. River Street, Ypsilanti, MI 48194-2898.

An annual set of reviews is to be found in Neill, S.B., & Neill, G.W. *Only the best: Annual guide to highest-rated educational software/multimedia for preschool—grade 12.* Carmichael, CA: Education News Service.

Free Spirit Publishing, 4009 First Avenue N., Suite 616, Minneapolis, MN 5540l-1724. Self-help for kids. This catalogue includes a number of books for gifted children (mostly older) and parents of gifted children.

Gifted Child Today, P.O. Box 637, Holmes, PA 19043-9937 (800-476-8711). This magazine for parents and teachers, mainly focused on school-aged gifted children, contains articles and reviews of books for children and parents that may be of some interest. Worth examining in your library, at least.

Organizations

National Association for Gifted Children, 1155 15th Street NW, Suite 1002, Washington, DC 20005 (202-785-4268). Parents are welcome.

The Association for the Gifted (TAG), Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091. Mainly an association of educators.

Other national organizations of parents and teachers exist, most of them designed for adults who deal with older gifted children. A list may be found in Saunders and Espeland, above. In addition, nearly all states have organizations concerned with gifted children. Some are primarily for educators, but most are for parents and educators. Your state's Department of Education can put you in touch with such organizations. Remember that many parents of school-aged children have younger gifted children as well!

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Parenting the Very Young, Gifted Child

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Confronting children whose development is charging rapidly ahead can be surprisingly disconcerting to their parents, despite the pleasure they can bring. Many responsible and thoughtful parents and teachers feel unprepared to cope with the challenge of children whose abilities and skills are emerging more rapidly than expected. It is natural that parents turn to professionals for answers to their many questions, and that those professionals in turn ask researchers:

- What does "giftedness" mean in a very young child?
- How does one know whether a child is gifted?
- Should a young child be tested?
- How does an adult promote such a child's development?
- Does a gifted child need a special program? Special lessons? A computer?
- What other aspects of development need attention?
- What about friends and playmates?
- How do ethnicity and gender relate to giftedness?
- Will such a child remain gifted in the long run?
- When should a gifted child start school?
- Where can I turn for help?

This report provides research-based answers to questions such as the above. It is designed to be read by physicians, psychologists, early childhood educators, and other professionals to whom parents may turn, as well as many parents themselves. As readers will find, there are far fewer definitive answers than there are questions. Moreover, most of this summary adds up to the essentials of good parenting for any child. Fortunately, with respect to very young gifted children, our society has so far largely avoided the political and scientific controversies about educational issues that plague consideration of older children. It is hoped that consideration of the specific issues relevant to the most highly capable children can help parents to proceed more confidently, and therefore more effectively.

Despite the significance and urgency of questions such as those listed above, the research dealing with very young gifted children—those not yet in kindergarten or first grade—is rather sparse. Much of it is retrospective, looking back on the early years of eminent people (mostly males, of course), whose childhood experience may well have been atypical for gifted young children and who, in any case, lived in periods of history different from our own (Albert, 1980; Cox, 1926; Galton, 1869; Ochse, 1990; Radford, 1990). Many of these historical figures, for example, were tutored at home until they entered universities, as was common for affluent families in their day (McCurdy, 1960) and many, though certainly not all, led painful lives as children (Goertzel, Goertzel, & Goertzel, 1978).

Just a few investigators have sought out small groups of gifted young children, observed them with their mothers (alas, not with their fathers), and followed them for a few years to see how things turned out. We have enough knowledge now to make some informed guesses to help parents meet the needs of precocious young children, but we are far from knowing all we need to know.

One thing is clear, however, a message that all parents should keep in mind: There are broad differences within any group of gifted children and in their families (McGuffog, Feiring, & Lewis, 1987), differences just as broad as in any other group of children. The reader is cautioned to remember that gifted children differ not only in the areas and levels of their special competence, but in their personalities and temperaments, their modes of dealing with the world, the kinds of families they come from, and almost every other way that children can differ. It is important that parents respond according to their children's individual characteristics and needs as well as their own values. If parents bring up children in the ways they feel comfortable, they stand a good chance of bringing up children who are healthy and fulfilled, whom they like, and who like them. Nothing in this report should be taken to contradict that truth.

What Does "Giftedness" Mean in a Very Young Child?

Generally speaking, giftedness in young children relates to their *precocity*, their rapid rate of development in one or more valued domains; that is, they resemble older normal children in those abilities. Such children are often, but not always, more curious and alert, more eager for a challenge, more aware of their own thinking than others, but no one has yet isolated a "giftedness factor" that sets them apart from other children (Jackson & Butterfield, 1986). Moreover, aside from their domain(s) of precocity, they may well seem more like children of their own age than older children, or perhaps some mixture of ages.

There is no real agreement on the definition of the word *giftedness* at any age (Sternberg & Davidson, 1986). Different experts emphasize different aspects of abilities and personal competence, and they do not even agree on the degree of advancement a child must show in rate of development to be termed "gifted." As a rule of thumb, children with an ability or abilities ahead of their age peers by as much as one-fourth to one-half their age (e.g., a four-year-old who is a year or two ahead in vocabulary and verbal problem-solving or is similarly advanced in reasoning with numbers or drawing), may be considered "gifted" in one or more areas.

For those who care for young children, the lack of an official or consensual definition is not a serious problem, and may actually be an advantage. The kinds of children we will discuss in this report are roughly ages five years and below, and recognizing and meeting their needs does not require a label or a categorical judgment as to whether they are, or are not, *"truly" gifted*. Their precise degree of difference from other children their age is not of much concern, although the faster the rate of development, the more urgent it is that parents and teachers be responsive to the child's special needs. Any label tends to have drawbacks as well as advantages, and it is only when school-aged children are to be selected for special opportunities that the label comes into play in any practical sense.

For giftedness to be expressed, a high level of ability is, of course, required but by itself is not enough (Renzulli, 1978). There are at least two other essential ingredients of high attainment. The first is persistence and motivation (called by Renzulli, *task commitment*). The second is *creativity*, a concept with many meanings to different writers (Sternberg, 1988) but generally referring to something like a willingness to take some risks in the area of talent, to gamble on a novel idea or perspective. Unless children try their best, drawn by their own involvement and commitment, their talent may well plateau or even disappear. And without an inventive spirit, the talented child may well become a first-rate carrier and interpreter of culture and knowledge—valuable roles, to be sure—but is less likely to become a significant contributor to either.

Giftedness has different meanings when applied to adults and children. In adults, we are talking about *actual accomplishments* and *expertise*; in children, we are talking about *advancement* and *promise*. Very seldom do we encounter preschool-aged *prodigies*, whose actual accomplishments would be impressive in an adult (Feldman, 1986). The rare exceptions tend to be musicians, such as Mozart, or artists, such as the contemporary Yani (Ho, 1989). Rather, in very young children, giftedness is important to recognize because, unless valued and nurtured, in the long run it may wither and fade (Feldman, 1986; Simonton, 1988), and because, in the short run, gifted children are at risk for debilitating boredom, frustration, and even depression if their needs for challenge are unmet. What is important for children of any age, and any ability level, is to achieve an appropriate, or *optimal match* between their environments, their readiness, and their pace of development, giving them the gradually expanding opportunities they need to grow.

How Does One Know Whether a Child is Gifted?

The essential issue in giftedness, as we have seen, is the rate at which the child's development proceeds. During toddlerhood and the preschool years, however, most adults lack accurate guidelines to recognize that their children's skills are out of the ordinary. They have, for example, no clear timetables as to when one should be able to converse with a child about something aside from the here-and-now, or when a child can understand that the world is not flat. During the school years, in contrast, we expect children to master academic milestones such as reading, multiplication, and using semicolons by specific ages, and therefore are more likely to notice and label them as "deviant" when they attain these benchmarks earlier or later than anticipated.

A knowledge of normal child development, gained through experience and/or through reading, is clearly essential in recognizing precocity in young children. One inexperienced young Chinese couple was, for example, surprised to learn that not every 15-month-old baby could identify the characters corresponding to a thousand spoken words, as could their attentive baby whose doting grandfather had read to her by the hour. In contrast, other inexperienced parents are so thunderstruck by their children's astonishing, but entirely normal, emerging language, that in their enthusiasm they believe their children must be gifted. One can judge precocity only if one has accurate information about the pace of normal development.

Parents are, however, for the most part, pretty accurate in recognizing giftedness in their children, if they have at least rough developmental standards by which to judge. What are the clues adults use to identify the advancement of gifted children? Investigators (Hanson, 1984; Klein, 1992; Lewis & Louis, 1991; Louis & Lewis, 1992; Silverman, Chitwood, & Waters, 1986; Tannenbaum, 1992) have found that parents of children who are advanced in reasoning tend to mention:

- impressive long-term and short-term memory
- long attention span
- early-emerging and extensive vocabulary
- imagination in expression, in make-believe play, in drawing and other activities
- insatiable curiosity about "everything" and/or about specific areas of interest
- preference for older playmates (or younger ones who will do their bidding)
- thinking about abstract concepts.

Young gifted children are also described as having more energy, persistence, and vigor (Carter, 1958; Miles, 1954; Terman, 1926) and enthusiasm (Hunt & Randhawa, 1980) than other children—indeed, they wear their parents out! Other gifted children in contrast, are thoughtful, introverted, and prefer to play quietly by themselves. Interestingly, parents who believe their children to be gifted because they exhibit specific knowledge such as reciting the alphabet or naming body parts rather than more pervasive traits such as the above, tend to have children who are above-average but not gifted in reasoning and problem-solving (Louis & Lewis, 1992).

There are, of course, other domains in which children may be gifted—sometimes specific sub-areas of reasoning such as arithmetic or puzzles, sometimes non-intellectual domains such as music, drawing, dance. It will be impossible to repeat this message throughout this document, but parents need to keep in mind that most of the research has dealt with children who are cognitively advanced, and very little of it with children with more specific domains of excellence. Caution is therefore advised when applying these findings to children with specific talents.

While many parents of children later identified as gifted have reported that their babies showed advancement at surprisingly early ages, such as watching faces and listening to language (Bornstein, 1989), exploiting toys, or talking much earlier than expected, many other parents of gifted children do not report anything out of the ordinary in the first year or even two. There are interesting indications that early competence in visual memory (for example, a baby's distinguishing unusually early between the familiar and the novel, possibly with precocious stranger anxiety) is a predictor of higher cognitive abilities, but these relationships are by no means strong enough to use reliably to predict development (Abroms, 1982b; Fagan, 1985; McCall & Carriger, 1993).

The signals adults use obviously relate to the child's age and domain of advancement. Some infants attract attention in the grocery store when strangers observe their unexpectedly broad vocabulary or, later, their adept arguments as to why a treat should be purchased or which cereal is a better buy. One parent observed his 13-month-old "pretending" to feed a doll from an empty animal-cracker box; another remarked on her 18-month-old's sorting and resorting blocks by shape, then by color, then again by shape; still another was entranced by the elaborate "super-heroic" plots devised by his four-year-old.

In one of the few studies (Robinson & Robinson, 1992) asking parents to identify children with a variety of intellectual skills, more than half of the two- to five-year-olds actually attained initial IQs of 132 or higher, 20 times the rate in the general population. Even among those with lower IQs, many showed genuine precocity in specific areas such as math or puzzles. Parents were better at identifying children who could reason well mathematically and read early than picking out those who exhibited precocious spatial reasoning and memory, areas in which adults do not possess very good timetables.

It is easiest and most reliable to spot precocity in a skill that is just emerging. For example, parents can accurately identify children with precocious language when they are 18-24 months old, because their early language skills are so strikingly ahead of other children of that age (Robinson, Dale, & Landesman, 1990; Robinson & Robinson, 1992). There are, however, a number of informal reports of gifted children who were appreciably late to start talking, although once they started, they quickly began to use sentences and paragraphs. Parents are also good at identifying precocious readers at kindergarten age and below, for the same reason (Jackson, 1992). Many gifted children do *not*, however, read at all early, although when they do begin to read, they generally catch on quickly and achieve impressive competence (Crain-Thoreson & Dale, 1992; Dale, Robinson, & Crain-

Thoreson, under review; Jackson, 1992). Some gifted children with late-emerging skills, like some other children, will have problems with specific school skills such as reading or math, but they are the exceptions.

Precocious thinking clearly characterizes young, gifted children. They learn more quickly, remember with less effort, reason with advanced skills, generalize (make connections) more readily, and are better observers and managers of their own thinking than other children of their age. In problem-solving activities, they tend to show a reasonable resemblance to children of their mental age, that is, they resemble children of an older chronological age (Kanevsky, 1992; Lempers, Block, Scott, & Draper, 1987; Planche, 1985; Shigaki & Wolf, 1982; Spitz, 1985; Zha, 1984). Because of their limited experience and their intuitive approach, however, they sometimes leap to erroneous conclusions that may for the moment mask their underlying ability.

Are some characteristics more typical of gifted children than nongifted children, regardless of age? If there are, then one such candidate is *metacognition*, that is, the set of skills by which children focus on their own thinking and manage it effectively. Kanevsky (1992) reports that young, gifted children given intriguing puzzles to solve were able to do this as well as older children of their average mental age, but in their engagement, independent and self-monitoring, they were more like older, gifted children—until they became too tired and cranky, whereupon they regressed to "being their age."

At ages 5 to 7 years, a number of interesting shifts ordinarily take place in the perspectives of young children. They become much more systematic in their understanding of the way the world works. In the terminology of Jean Piaget (see Flavell, 1963), they move from the *pre-operational stage* to the *stage of concrete operations*. They are able, for example, to figure out different ways to solve the same problem and different ways to classify the same set of objects, to use new strategies to learn and remember, and to begin to see the world from the perspective of someone besides themselves and therefore to be more effective communicators (Flavell, Miller, & Miller, 1993). Although earlier they exhibited encapsulated areas of competence, now they become better able to generalize and apply their knowledge broadly, and to expect predictable results when something occurs. Unfortunately, they also lose some of the appealingly magical and intuitive qualities of thinking of three- and four-year olds. They tend to substitute games with rules for free-wheeling imaginative play and to care about enforcing rules, winning and losing.

With respect to activities that usually show an age shift from intuitive to more systematic thinking at about age 6 (e.g., understanding that pouring water from a squat beaker to a tall, thin one does not affect its volume), even very bright children at age 4 may not "get it," but by age 5, they not only do typically solve the problem but master it rapidly and fully (e.g., Brown, 1973; DeVries, 1974; Little, 1972; Porath, 1992). Bright children do not tend to walk earlier than age-peers (Krinsky, Jackson, & Robinson, 1977) or to be ahead of others in the ordinary gross motor skills like running and jumping (Robinson et al., 1990), but they may be ahead in those motor skills that require more complex planning or strategies or following instructions (Leithwood, 1971).

There are some realms in which being ahead of one's years can be painful. Just as their interests are more mature than those of older children, so are the things they worry about (Klene, 1988). Many gifted young children discover the concept of death and its irreversibility, and some discover the concept of infinity, before they have good ways to deal emotionally with their implications. Their precocious encounters with concepts of success and failure may make them cautious about new activities. When they begin to be able to see the world through the eyes of others, they may become especially sensitive to witnessing hurt of one child by another, and watching the news with their parents, they

may empathically suffer for child victims of war and famine. There is not much that parents can do to prevent their children's initial encounters with big worries as opposed to small ones, but talking about their fears and feelings sympathetically and giving them, where possible, positive actions (e.g., expressing friendship toward a hurt child, making a contribution to a charitable organization) may reduce the feelings of helplessness.

Should My Young Child be Tested?

Parents who question whether their child's development is actually ahead of norms can get information from a number of sources. There are numerous useful books describing the pace and variation of normal development (see, for example, the Ames and Ilg series listed in *Books for Parents and Teachers* at the end of this publication), although no child fits or exceeds the norm in all ways. Help can be sought from professionals such as physicians and preschool teachers who know children in general as well as the child in question. Indeed, the child's physician may, as a matter of routine, administer a developmental screening measure. Finally, direct observation, such as watching preschool groups of the child's own age and the next age group up, will give the parent a sense of their child's developmental trajectory, of the areas in which their child seems to fit well with age-mates and those in which they are more like older children.

Developmental assessment by a psychologist may be considered under special circumstances, but, when a very young child is being evaluated, there are many pitfalls. Not only is testing likely to be costly, but at times it may be misleading as well.

Many of the tests available for young children are age-normed and can be used to describe children who are advanced in one or more abilities. All these measures are administered individually to young children. There are measures of general ability, or intelligence, that tend to consist of relatively novel items calling for general knowledge and problem-solving strategies. There are also many domain-specific tests, such as tests of receptive or expressive language, eye-hand coordination, and early reading and arithmetic. All these tests yield standard scores that compare the children to the norm for their age. The scores are called *IQs* (*Intelligence Quotients*) if they are derived from tests of general intelligence, or by other names for tests of more specific abilities. A score of 100 is average, with scores of 85 to 115 attained by the middle two-thirds of children on that scale. A score of 125 or so denotes performance roughly in the top 5 percent of the scores earned by children of that age, while a score of 133 or higher is earned by only 1 percent of children.

Some other measures, in contrast, ask the parent or teacher to respond to questionnaires. Sometimes the parent is asked to describe the child's skills in various areas of competence; sometimes the focus is on behavior problems and/or social adjustment.

Test scores earned by very young children tend to be notoriously unstable, for a number of good reasons. First, young children tend to be much more affected by temporary changes of state—hunger, fatigue, minor illnesses, or simply by wondering where their parents are—than older children, and when this happens, they often revert to acting their age, rather than doing their best (Kanevsky, 1992). Second, egocentrism, inconsistency, and intuitive thinking are typical even of very bright preschool children, who are still in what is known as the *pre-operational stage* (see Flavel, 1963), so that they not only may reach erroneous conclusions but may have difficulty seeing what sort of answer the examiner wants. A young child who is at times capable of a rather mature strategy, such as adding and subtracting using the fingers of both hands, may (to the

frustration of parent and tester) use the strategy for some of the problems and give "off the wall" answers to others in the same series.

Third, children's normal short-term developmental course, or rate of growth, may be uneven, with a spurt of progress followed by a plateau and then by a new spurt. In very young children, whose base of knowledge and skills is small, such spurts tend to show up more strikingly and affect scores more than in older children.

Fourth, the "perfect" instrument for assessing cognitive functioning in preschoolers does not exist. Some are relatively uninteresting to very young children (Robinson, 1992) or are out of date (Silverman & Kearney, 1992); some are too greatly affected by speed of response (Kaufman, 1992) and/or fail to possess enough "top" for very bright children nearing the ceiling of the age range (Kaplan, 1992). None of these is a "fatal flaw" with most children, most of the time, but together these problems add to the limitations of testing with very young children.

Fifth, for reasons often hard to fathom, there are individual differences in children's long-term patterns of development, although, of course, all children do continue to learn and grow. Some show steady increases in rate of development (and, therefore, IQ) from early childhood onward; some show steady decreases; some experience ups and downs; and some show a steady and predictable course (Honzik, Macfarlane, & Allen, 1948). There are some hints, but only hints, about children whose scores tend to rise rather than fall over the years of middle childhood. These children tend to be more active and energetic (Sontag, Baker, & Nelson, 1958), to be more curious, assertive, and socially skilled (Kohn & Rosman, 1972), and, in preschool, to show a relative preference for interacting with teachers rather than other children only (Harper & Huie, 1987). Certainly, there are strong contributions of the family as well. Some IQ changes correspond to shifts in family situations (e.g., conflicts) and/or children's adjustment (Honzik et al., 1948). In the long run, parental and even grandparental education and occupations—which in turn represent a whole series of factors—also relate to IQ changes from preschool to adolescence, though not beyond (Bradway & Robinson, 1961).

All in all, this adds up to many reasons for conservatism in seeking psychological testing for young children. There are, of course, special situations in which testing may be needed. Some schools for gifted children require testing even for entry to kindergarten. Some children show significant unevenness in development on which testing can shed some light (for example, in a child who is slow to begin speaking, testing may help to differentiate normal or even advanced intelligence from overall developmental delay). In any event, if testing is sought, it should be carried out by a licensed or certified psychologist accustomed to testing preschoolers and familiar with the characteristics of gifted children. Indeed, the observations of such a tester are likely to be as valuable as the scores. The instrument should also present enough "top" that some of the questions will be too difficult, if the test is to give an accurate picture of what the child can, and cannot yet, accomplish.

Unless, however, testing is needed for a specific purpose, it is generally wiser to focus on an accurate description of skills and interests in the here and now, and on meeting these, than to look at performance on measures of intelligence. Although children who are significantly ahead usually tend to stay ahead of their agemates, scores on tests during the preschool period are not very reliable, and testing may for that reason do more harm than good.

How Do Adults Promote the Development of Gifted Children?

Parents' most desperate questions often relate to what they may see as their awesome, unexpected, and perhaps unwelcome, responsibility to support the growth of their gifted children. Because some of their children's needs are different from those of agemates, more responsibility does indeed fall to parents to find and/or create healthy matches for their children's needs. Such matches may not occur automatically in playgroups, preschools, or other settings designed for age-peers, and parents may need to advocate for flexible placement, to use local facilities other than schools, to modify and compromise, and to spend a good deal of time with the children themselves.

Although there are many exceptions to this rule, children identified as gifted tend to come from homes that are relatively rich in resources: psychological and educational resources as well as socioeconomic ones. This fact has been documented over and over by investigators (e.g., Bloom, 1985; Kulieke & Olszewski-Kubilius, 1989; Terman, 1926), but it does not tell the whole story. Specifically, it does not tell what parents do that makes a difference in their children's lives. Economic factors per se are surely much less important than the organization and effective functioning of the home, the degree to which parents are responsive to children, and the opportunities for affectionate support and for stimulation and exploration that a favorable home provides.

Parenting gifted children takes time—hours and hours of caretakers' time. In comparison with parents of nongifted children, parents of gifted preschoolers report that they spend much more time in critical activities such as reading, playing, making up rhymes and songs, and going to interesting places (Karnes, Shwedel, & Steinberg, 1984). One study found, unexpectedly, that fathers of early readers reported that they worked at their jobs, on average, 10 fewer hours a week than did fathers of non-readers (Thomas, 1984).

Gifted preschoolers acquire some of their advanced skills at problem-solving by picking up cues from their parents. One series of studies has focused, for example, on metacognition, that is, children's monitoring and managing their own learning. Mothers of brighter children, and mothers with higher education themselves (Bee et al., 1969; Hess & Shipman, 1969) encourage metacognitive strategies by setting up questions and problems but letting the children derive their own solutions, rather than giving them the answers (Moss, 1990, 1992; Moss & Strayer, 1990). They may do what is known as *scaffolding*, providing only the basic framework of information a child needs so that the child takes the lead—rather like a partner holding a finger on the knot while the child ties the bow. The mothers thereby support the process of problem-solving rather than short-cutting it or doing it themselves.

There are, however, many different ways to raise bright children, and there are wide individual differences in parents' strategies. Fowler (1981), studying highly precocious children, described two such parenting styles. One involved a deliberate, planned, structured, and rather demanding instructional approach, while the other was more responsive and incidental. Both were, however, stimulating, playful, and child-centered, and sensitive about when the child was ready to move on to a new concept.

Children build ideas and concepts from their experiences, and gifted children profit from broad exposure. Especially when children are young, some quite suitable opportunities are not at all costly. Many, indeed, are simply routine daily activities that can be turned into learning experiences by helping the child to focus on what may be interesting. Every day has many such chances, both in the home (e.g., cooking, sorting

clothes or silverware, figuring the time until lunch, watching the birds at a feeder, reading, watching TV together) or easily accessible (e.g., a walk around the neighborhood, or a visit to a grocery or pet store, a construction site, or a small airport) that can provide the occasion for new learning.

Simply doing an activity does not guarantee that it will be exploited as a learning opportunity. A young child does not necessarily bring to a situation the ability to scan it systematically and needs adult help in focusing on what is most useful. Furthermore, by talking before, during, and after an episode, the child learns to describe experiences logically, acquires new concepts, links them to familiar ones, and broadens vocabulary. What to adults may be the most mundane events (going to a hardware store, waiting for a bus) can be exciting to a child if the experience is exploited. Children learn more while watching television if an adult accompanies them and talks about what they are seeing (Abelman, 1992), and they can learn more from being read to if adults also talk about the book and elicit the child's response (Jackson & Roller, 1993).

Indeed, reading to children is something of an art in itself. Often, "reading" to young children involves much more talking about the book and the story than actually reading the words aloud, and it is the responsiveness of the adult and the engagement of the child that determine the joy and lasting value both will derive in reading the book of the moment as well as books to come. Because of the publication in this Research-Based Decision Making Series of the excellent resource by Jackson and Roller (1993), *Reading With Young Children*, we will not go into further detail about this process. Yet, reading to young children (and not stopping when they learn to read for themselves) is probably the single most critical investment that parents can make.

The child is, of course, an active partner in the learning process, and children are powerful shapers of their own environments (Plomin & Daniels, 1987). One effective way they do this is by showing more interest in one thing than another. For example, infants who will later be verbally precocious toddlers not only are talked to a great deal by their parents but also seem to be early listeners, effectively encouraging their parents to keep talking. Children who will later be early and skillful readers are eager and attentive when being read to even at two years of age (Dale, Crain-Thoreson, & Robinson, under review), and show an early preference for reading-readiness toys over fantasy toys (Thomas, 1984). Early readers comment on words and ask questions about reading, thereby eliciting instruction from parents who would otherwise wait until later. The same is true of children who may be passionately interested in vehicles, dinosaurs, plumbing, royalty, maps, computers, or anything else. Children's questions make teachers of their caregivers, generating more cycles of questions and answers and thereby opening new vistas of all sorts. Parenting any child is a two-way street.

Does a Gifted Child Need a Special School? Special Lessons? Special Equipment?

Special Programs

Much of the literature about preschools and gifted young children, in fact, deals with programs especially designed for them. These preschool programs generally represent attempts to achieve a wholesome match with the advanced cognitive and social skills of the children, presenting them with interesting topics for exploration, science experiments, literature, and elaborate dramatic play usually of interest to older children. At the same time, these programs emphasize movement, action, and hands-on exploration,

and make allowances for short attention spans and immature fine and gross motor skills. Very few of the programs are heavily didactic or strongly teacher-directed; such programs run the risk of impacting negatively on young children's social-motivational development (Stipek, Daniels, Milburn, & Feller, 1993). Many of the special programs are intriguing and the accounts of the thriving gifted children who attend them make convincing reading. It would be easy to conclude that dedicated parents should, if at all possible, try to secure a place for their gifted children in special preschools. In fact, however, there is next-to-no scientific evidence that gifted children develop more favorably or are happier in such settings than in any others (Robinson, 1993).

The problem is not that these programs are ineffective or inappropriate. Indeed, there is every reason to suspect that most do an excellent job. The problem is in the difficulty of testing their outcomes, of proving that they make a significant difference in children's lives. The children who are enrolled in them come, generally, from middle-class homes and child-centered families who offer them other advantages as well. Almost all the programs described in the literature have been devised in university settings attracting educated families. To prove their effectiveness scientifically, at a minimum, it would be necessary to assess the developmental status and/or personal characteristics of a large group of gifted children, then to assign, randomly, half the children to the special preschool and half to another good school serving unselected children from equivalent backgrounds, and finally to reassess all the children's development and adjustment at the end of the year. Indeed, one would like to follow the children for several years to see whether short-term gains are maintained. Such research procedures are expensive; there are very seldom the necessary funds available; and, furthermore, few parents would be willing to let the laws of chance govern which preschool their child attends.

There are a few studies of special programs available, but they are not convincing. Almost all authors report satisfied customers. Most studies going beyond this simple criterion have used no comparison groups at all (Hanninen, 1984; Karnes, Shwedel, & Lewis, 1983a,b), although those investigators have reported at least short-term gains in academic skills, self-esteem, and creativity. One study using a suitable comparison group (Draper, Larsen, Harris, & Robinson, 1992) did, in fact, not report advantages for the gifted children enrolled.

And yet, in the experience of almost all professionals involved with young, gifted children, there are a great many stories of children who had been profoundly unhappy with agemates who are "on a different wavelength," and with whom they had no common ground of verbal skills and interests, children whose adjustment improved remarkably in a setting with older and/or brighter children. The first preschool teacher of one exceedingly bright four-year-old, for example, suspected that she was autistic because, depressed and lonely, she repeatedly "solved" the same four-piece puzzle day after day. Moved to a school designed for bright children, she blossomed sunnily, moving ahead confidently with agemates and older children who "spoke her language." It is understandable that firm evidence is not in hand with which to advise parents about preschool choices even in those relatively few communities in which specialized preschools are available. But it is unfortunate.

Interestingly, there are very few studies whatsoever of day care provisions for gifted children, aside from special all-day preschools. The single study we know (Field, 1991) found that children who, as infants, had received high-quality day care were more often admitted in grade school to special programs for gifted children. These children may, however, have had other advantages, too.

A good program for a gifted child not only meets all the criteria of a wholesome program for average children but, in addition, needs to be flexible enough to provide for children's needs at many levels—opportunities for intellectual challenge and conversation at the child's mental age level as well as a daily rhythm, social play, emotional support, and challenges to gross and fine motor skills at age level, if necessary, or anywhere in between. Montessori-type schools typically are designed to let children advance at their own speed, but vary widely among themselves in quality. Even the most ordinary preschool may provide a very appropriate experience for a gifted child if staff are flexible and sensitive to the child's varying maturity levels. Caretakers' training in child development often heightens such awareness. Parents need to look carefully before placing their children, gifted or nongifted, in any preschool or day care setting.

On the basis of the literature, we can best advise parents to shop wisely for preschools and day care settings for their children. There is certainly no reason to avoid well run programs designed for gifted children; other things being equal, the children are likely to be happy there. At the same time, parents need not feel discouraged if no such program is available or affordable.

Teaching Reading and Math

Viewing the advanced skills of some children who read early, parents often inquire whether they should be undertaking instruction in reading and math skills. Generally speaking, the most effective ways to encourage a solid foundation for reading skills are not direct instruction but those rich contexts of reading that include conversation, vocabulary, careful listening, and an appreciation of reading and writing. Models of parents, who themselves read for pleasure and share the pleasure of reading by reading to their child, are much more important than flash cards and computer toys.

Before going to school, children do need to be able to recognize letters and associate them with specific sounds. They gain this knowledge in many ways, through rhyming games; learning to print their own names and other favorite words; having a word casually pointed out in a book; watching "Sesame Street," "Reading Rainbow," and the like; conversing about traffic signs or store logos; and so on. Children also acquire a basic sight vocabulary that extends their recognition of words. Beyond this information, children need to know about books—where the book begins and ends, that print goes from left to right and is segmented into words, that capitals mark new sentences, and so on (Jackson & Roller, 1993).

With respect to number knowledge, bright children similarly can be expected to know before they go to school how to count out objects, that numbers are ordered from small to large, that they fall into patterns, and that they can be combined and recombined in various ways. Most children will discover on their own how to use fingers to help them solve simple problems. They should be familiar with coins but may not know their relative values. Some children will have learned to tell time but most will not by age 5. They do not need to know "number facts," nor do they need to know conventions in paper-and-pencil calculation such as those they will encounter on endless worksheets later on. Again, it is through informal exposure to numbers, while setting the table or cooking with parents, reading a thermometer or a street sign, and using numbers in talking about the child's experiences ("how many grapes do you want?") that such skills emerge in natural contexts.

Lessons and Skills

For children with special talents, parents often question whether they should be given specialized instruction. Here, we have no research at all to guide us. The most

important issues here are whether a teacher can be found who likes children, who begins gently and playfully, and who responds to the child's interests and abilities—and someone whose fees fit into the family budget (Bloom, 1985).

If children's days are not already tightly scheduled, this is a nice time of life to introduce them to a few opportunities for group instruction in movement patterns such as creative dance, gymnastics, or swimming, but only if they enjoy it and the classes are joyful. Low-cost classes are usually available through city parks departments and the like. Some unsuspected talents may or may not emerge, but the beginning opportunity for trying out new skills can be envigorating for a child who takes to it. Modern parents easily fall, however, into the double traps of overscheduling their children and themselves, and of becoming too invested in whether the child does well.

To express a creative spirit, people need skills to match their ideas. In the United States, we have been loathe to teach young children how to use tools of the creative trade, preferring to let them find their own way. We give them fat pencils, blunt scissors, big easels, and huge brushes with which not even the most talented youngster could create a work of art. There are, of course, some gifted children whose fine motor skills come slowly, and who need time to mature at their own pace, but most young children can, in fact, acquire a higher degree of skill in using tools than we give them credit for.

We recall visiting a class in the Soviet Union in 1972, during a snowfall. While their teacher read a poem about snow, cheerful kindergartners using pointed little sewing scissors, cut out numerous snowflakes and made a mini-snowfall of their own, admiring the uniqueness of everyone's contributions. It is, in fact, only with mastery of the tools of one's talents that anyone is likely to come close to expressing truly creative ideas.

Home Computers and Electronic Toys

Finally, many parents also question whether home computers and electronic toys are a good investment for young, gifted children.

With respect to electronic toys, most are targeted at a single use and quickly outgrown. Only a few such toys provide a variety of games and are of sufficiently graduated difficulty level to keep the child interested over a long enough period to justify the expense. In contrast, for a child who loves numbers, an inexpensive calculator costing a few dollars can provide just as much fun, can be used at many levels of complexity, and can be put away when interest wanes and brought out again when appropriate.

The costs of a good computer and software are considerable, and the question is a serious one. Some gifted children indeed master educational programs quickly and with delight; many unconsciously acquire reading, vocabulary, spatial, numerical, and fine motor skills, as well as beginning writing skills in the course of play. There are a number of attractive computer programs well suited to the emerging talents of young children, enabling them to master more and more complex tasks at their own pace, although many other programs (perhaps most of them) are unimaginative and limited in scope. Some of the better programs explicitly teach skills such as reading, math, geography, and chess that are transferable to other settings. Elementary touch-typing games also provide a good foundation for the acquisition of word-processing skills. (See a source of software reviews under "Other Resources" at the end of this publication.)

Research on the long-term effects of such experience for preschoolers is almost nil, however. Our best advice is that, if it is affordable, if it fits family plans, and if a child shows interest, a family computer is a good investment—one with a color monitor (needed

for almost all children's programs), a mouse, and enough power to run programs that demand considerable memory capacity. If possible, the machine should be compatible with computers used at the elementary school the child will attend. The system should be potentially expandable to incorporate CD-ROM, richly potent compact disks that will constitute the next wave of educational materials. When purchasing programs, as in purchasing toys, preference should be given to those that give the child choices and graded challenges. Parents are warned, however, to protect their own files from exploratory little "hackers!"

At the same time, parents of most young children should not feel compelled to give the highest priority to this expense. There is no research that has tested long-term effects of such exposure. Parents who themselves are not computer-literate cannot introduce their children as effectively to use of the equipment as will their school teachers later on, with the result that the investment may be worthless until that happens. Furthermore, there are other priorities to be weighed in any family, other ways to spend the same money that might be more important. The evidence is, so far, not compelling.

If I Do Everything Right, Can I Create a Gifted Child?

Summing up all of the above evidence, it should be clear that, at least in the foreseeable future, no one can "create" a gifted child from scratch. The combination of intelligence, talent, temperament, motivation, and creativity that constitute giftedness derive from many sources—some genetic, some environmental. Good parenting can enhance a child's resources and can support a child's entrancement with learning and growing, but only to a degree. It is basically when development is within "shouting distance" of a new attainment—in what the psychologist, Vygotsky (1978), termed the *zone of proximal development* that change occurs. As we noted before, despite intensive teaching, even very gifted 4-year-olds tend not to attain stages of development normally attained at age 6, although gifted 5-year-olds often do. It is not, then, up to parents to create giftedness, but to assist in reaching or acquiring new concepts when the child is ready to learn them.

There are, to be sure, a few reports of rather dramatic effects of early teaching. Fowler (1992), for example, has reported some striking long-term effects of early and continuing language stimulation skills taught to mothers who were themselves not very well educated. Such reports are highly provocative, but bear replicating.

What Other Aspects of Development Need Attention?

Very young gifted children are, of course, children first and gifted second. Most of what they need from their parents and teachers is very much the same as it would be if they were not gifted. This section will focus on only a few topics, all of them outside the realm of cognitive development, areas of personal development that are likely to relate to children's advanced abilities and to contribute to children's ultimately turning potential giftedness into reality.

Discipline or Debate?

A central issue in childrearing is how best to provide the structure and consistency children need while at the same time encouraging their independence of thinking and reasoning. A great many parents, especially those whose children are verbally advanced, report themselves to be inextricably drawn into extended arguments about everyday requests (such as feeling the need to give "eight new reasons every night for a child to take

a bath"). As a result, everyday lives become battlegrounds; negative emotions predominate; parents have a great deal of trouble maintaining consistency and getting anything done. Under such circumstances, all the members of the family tend to be unhappy with one another, the parents feeling helpless and angry, and the children upset, demanding, and displeased with themselves.

The most effective families, in terms of child outcomes, are those in which *authoritative parenting* is the mode (Baumrind, 1971). In this style of interaction, parents establish and maintain rules in rational and benevolent ways, supporting and valuing the growth of the children within family structure that, while not inflexible, communicates parental expectations and leadership clearly and consistently. In such families, parents are neither rigidly *authoritarian* nor unduly *permissive*, and children's efforts are clearly appreciated. Children tend to thrive when rules are appropriate, explicit, and firm. Within those limits, freedom of choice and experimentation are also explicit. With rules for guidance, children feel protected from the dangers that would lurk were they given more responsibility and self-determination than they could handle (loudly, as they demand it). Families that hold high but attainable expectations for their children and promote independence, but also provide a high degree of emotional support, tend to produce children who develop and maintain their talents (Csikszentmihalyi, Rathunde, & Whalen, 1993).

It is often parents with the highest motivation to do a good job, who become enmeshed in verbal battles with their children. Verbally gifted children can be remarkably good debaters. Some parents are inexperienced and overwhelmed by the children's demands; some have come from authoritarian or even abusive families whose patterns they reject but for which they have no ready substitute; some parents have waited so long and anxiously to have children that they "overvalue," overindulge, and overprotect them (Rimm, 1986). Still others respond so appreciatively to their children's advanced verbal abilities that they lose sight of the children's needs for consistency and guidance in their everyday lives. Parents who find themselves seriously enmeshed are advised to seek help from professionals who can help them find ways to turn these patterns into those that can be more satisfying for all concerned.

Achievement Motivation

If giftedness is to be expressed and developed, there must be the motivation to achieve, a definite commitment and investment on the part of the child (Renzulli, 1978). Such commitment is not to be expected during early childhood—indeed, even the world-class achievers in athletics, the arts, and science studied by Bloom (1985) and his colleagues tended not to have developed consistently strong achievement motivation until the middle years of childhood. Most young children do exhibit considerable mastery motivation—persistence in learning new skills and pleasure with their own attainment—but they also tend to be healthy hedonists, driven for the most part by their desires or antipathies of the moment.

Yet, in those who later are high achievers, precursors of strong commitment are observable in early childhood (Freeburg & Payne, 1967; Geppert & Kuster, 1983). In a large sample of gifted individuals followed over the lifespan, the most successful men had been encouraged by their parents toward initiative and independence (Terman & Oden, 1947). Bloom (1985), in the study mentioned above, described the parents of later world-class achievers as, during the early years, being child-centered, involving their children informally in shared family activities and yet at the same time gently instilling the "value of achievement," that is, self-discipline, the importance of doing one's best, and the satisfaction of accomplishment.

Achievement motivation tends to develop when parents encourage and value early independence and expose their young children to situations that allow them to master new challenges with autonomy (Dweck & Elliott, 1983; Henderson & Dweck, 1990; McClelland, Atkinson, Clark, & Lowell, 1953; Trudewind, 1982). They take the extra time it takes for children to dress themselves or get themselves a drink of water. They give the children room to grow and recognize their efforts even more than the quality of their performance, saying, for example, "That was a hard (or new) thing you tried!" "You really worked on that!" or questioning, "How did you figure out how to do that?" Although young children are generally less critical of their own performance than they will be later, it is important even at this age that gifted children receive less recognition for accomplishing what they know to have been very easy for them, than for their investment in next steps and new ventures. As we shall discuss in the next section, achievement motivation and self-esteem go hand in hand.

Self-Esteem

Although the emotional development of gifted school-aged children has been often studied (Janos & Robinson, 1985; Robinson & Noble, 1991), very little is known about the emotional development of gifted infants, toddlers, and preschoolers. Most of the evidence points, however, toward at least as healthy adjustment, on average, as that of non-gifted young children.

Even so, parents of gifted children are rightly concerned about the pitfalls their children face if they are chronically underchallenged. It is easy for bright children to come to see themselves as somehow ordained to be the best or fastest at learning, but this self-view is rather fragile. These same children may remain quite inexperienced at how to deal with concepts they do not grasp right away, games they can't always win, or skills (like using scissors or tying a bow) that need practice. Indeed, young gifted children, to whom much does come easily, may be especially vulnerable to debilitating frustration when things do not fall readily into place, or when their projects fail to match the level at which they can conceptualize them. Wise parents, while wanting their children to feel strong, valued, and competent, also expose them to appropriate new situations that help them to develop confidence in their ability to handle challenges without always having to be best, or instantly an expert. When things always come too easily, with little reason or reinforcement for trying hard things, what else is a very bright child to conclude than that high ability is indeed a "gift?"

Actually, most young children do hold to what has been called by Carol Dweck and her colleagues (Dweck & Elliott, 1983) an *incremental theory of intelligence*. They see one's ability as dependent mainly on hard work; the harder you work, the smarter you become. Older children and adults (including parents and teachers), especially very bright ones, are more likely to develop an *entity theory of intelligence*, intelligence being something you "have" or "don't have." Following an entity theory, having to work hard disconfirms one's being a bright or gifted person, and so is to be avoided. The most realistic and wholesome point of view is one that incorporates both sides of the issue but leans toward an incremental theory. Hard work does tend to pay off, during childhood as well as adulthood; "use it or lose it!" The issue here is not so much how young children will view their abilities on their own, before entering school, but what they will pick up from parents, teachers, and older siblings about meeting challenges with confidence and optimism.

Perfectionism

Young gifted children have been frequently described in individual case studies (but not in studies based on groups) as *perfectionistic*, that is, self-critical, setting high standards for their own performance, and monitoring their attainment according to what others think (Strang, 1951; Whitmore, 1980). What is good and necessary for ultimate high achievement—that is, setting high but not unattainable goals for oneself—can be either a positive or a negative force in one's life. A delight in mastering more difficult, challenging tasks may well be the secret of success. Even in young infants, pleasure in mastering tasks during a test can be more predictive of later high ability than the actual test scores attained (Birns & Golden, 1972).

Adults can help in a number of ways. They can, for example, serve as models by sharing their own pleasure in attaining treasured goals, whether the goals are large or small. They can take in stride their own attempts and experiments that don't pay off. They can also help children to formulate their own goals as progress toward, rather than achievement of, a first-rate performance.

As an example, young gifted children often grasp the rules of board games and card games earlier than their agemates, games that involve some strategizing. In the beginning, most very young children are content to let everyone win; after the first player reaches the end, the others take turns until they do as well. While adults and older children need to use some discretion in balancing the odds of winning and losing when playing with preschoolers, losing may become so painful for children who have acquired the concept of a single winner that they quit the activity altogether upon losing a round. Games provide fertile ground for many lessons: the payoff for learning new strategies and skills, how to put up with the vagaries of good and bad luck, and how unreasonable it is to avoid activities at which one is not always the winner, not always perfect.

Perfectionism is commonly thought in our society to be neurotic and destructive. Indeed, it can be, but those who are to become truly gifted will not do so unless they have ambitiously high standards for their own performance and keep trying (Simonton, 1988; Zuckerman, 1979). The aspects of adult perfectionism that cause depression come not from the standards people set for themselves, but from feeling unable to measure up to the standards of others (Hewitt & Flett, 1990). Parents are the most powerful standard-setters in the young child's environment; their expectations powerfully affect the goals their children gradually internalize (Bandura, 1977; Parsons, Adler, & Kaczala, 1982). So adults can help young children to set worthy but attainable goals, cheer them on to do their best, and at the same time let them know how deeply they are appreciated, whatever the outcome of their efforts.

Creativity and Risk-Taking

As we have pointed out, some risk-taking is essential to the realization of the promise of early childhood. All little children are creative in the sense that they see the world in fresh ways, but even in early childhood, children differ markedly in the cautiousness with which they approach problems. The essence of being willing to take some risks is that one will make mistakes. For example, verbally precocious toddlers differ in the risks they take in using pronouns. Those who produce more pronoun errors (e.g., "Pick-you me up!" in response to, "Shall I pick you up?") are also those who are most courageously willing to let fly with language, right or wrong (Crain-Thoreson & Dale, in press).

Very few studies have looked at original thinking, or cognitive risk-taking, in very young children. In one of the few exceptions, there did seem to be some stability in this characteristic, at least from age 4 to age 8 (Moore & Sawyers, 1987), and, furthermore, creativity appeared to be relatively independent of IQ (Moran, Milgram, Sawyers, & Fu, 1983).

"Risk-taking" is just that, trying the new, risking errors, some of them rather spectacular. Children can therefore profit from adults' acceptance of mistakes—their own as well as the children's—as opportunities for new learning. Negative criticism can be truly destructive of the courage to be creative (Lovecky, 1992). What one wants a child to maintain is "...to work for the joy of playing with ideas, and the inherent satisfaction of trying something new, rather than working for praise" (p. 20). Gently and tactfully focusing on what does and does not work about an idea teaches that each attempt can lead to the next. This is the tack taken, for example, by the father of the remarkable young Chinese artist, Yani, a true prodigy in that her sketches of monkeys, by age 3, were of a lively quality that even many adult artists do not achieve (Ho, 1989; Zhensun & Low, 1991). Adults who care for children will help them label even their disasters as worthy experiments.

What About Friends and Playmates?

Finding compatible friends for gifted young children is frequently a challenge for parents. Here, again, there is no substitute for knowing one's own child. Some young children love active outdoor play, and for them, playgroups of like-age children are likely to be quite congenial, at least for those purposes. A great many gifted young children gravitate at some times toward older children, with whom they can share interests, conversation, and perhaps other skills, and at other times, toward younger children who are willing to follow their lead in imaginative play, as older children probably would not.

Some observers of gifted young children have concluded that, although they exhibit advanced verbal understanding of social situations, they do not necessarily carry out their understandings in actual behavior with other children (Roedell, Jackson, & Robinson, 1980). They may demonstrate advanced knowledge, creativity, social maturity, independence, and persistence toward goals, but may be no more likely to share, take turns, or "follow the leader" than any other child of their age. Yet, other observers have concluded that gifted preschool children are indeed more socially mature than children of average ability, showing more cooperative play, more independence and creativity, and more complex and sophisticated play patterns (more complicated plots with more characters, more props, longer sequences in dramatic episodes) (Abroms, 1982a; Abroms & Gollin, 1980; Barnett & Fiscella, 1985; Kitano, 1985).

Some gifted preschoolers are, of course, shy and others confident; some are highly verbal and others quiet; some join in rambunctious play and others sit on the sidelines, or ignore the other children in favor of their own pursuits. Each is an individual.

Even so, the discrepancies between the mental ages of gifted young children and their playmates can make for deep disappointment and conflict. They expect more understanding by their friends than the friends are capable of, and hope for qualities of friendship like loyalty and the ability to keep a secret that are still beyond their playmates. One 4-year-old, for example, left notes to his friends like "call me tonite after 6," which meant nothing to children who could not read, tell time, or use a telephone independently. Another apparently popular 4-year-old told his mother that he had "no friend," by which he

meant that he had no long-term pal, no soulmate; his age peers were not ready for that kind of relationship.

As a rule of thumb, then, parents will want to provide either a setting, such as a preschool for gifted children, with other children of similar talents and similar age, or a variety of settings (perhaps in the extended family or neighborhood, or within a multi-age preschool) so that their children can seek out playmates with different characteristics for different purposes. They may need agemates with whom to have a tricycle parade; younger children to be pupils to be taught in "school," or enemies for their superheroes; and older children with whom to tell jokes, do a science experiment, or listen to a story.

How Do Ethnicity and Gender Relate to Giftedness?

Sadly, we have very little information other than anecdotes about how group differences such as ethnicity, bilingualism, or gender interact with children's high ability. Family differences are highly influential, but ethnicity may have little to do with it. Families who are overwhelmingly disorganized, alienated from the educational system, and/or too stressed by economic and personal issues to devote extra energy to their children, are less likely to rear gifted children than families who are able to be more sensitively responsive to their children's needs (Clarke-Stewart, 1973). Families who recognize and value advancement in their children are more likely to promote their children's continued attainment, but such families may come from any segment of society, and there are gifted young children to be found in inner cities as well as suburbs, immigrant families as well as the settled, and families of every ethnic identity. It is of great concern to many professionals that gifted children not be overlooked because their families are culturally different, or isolated, or poor, or otherwise stressed, or because they themselves are disabled or non-English speaking, but with few exceptions (e.g., Karnes, 1983) researchers have not looked at preschool children in this way.

The same limitations surround issues of the origins of gender differences in gifted boys and girls. It is clear that school-aged gifted boys are advantaged over girls in terms of teacher attention, membership in classes for gifted children, and social acceptance, especially during the adolescent years, but the origins of these gender differences are unclear. Certainly there are greater social pressures on girls to hide their brightness in order to be "like everyone else" as adolescence approaches, but there are also many anecdotes about gifted preschool girls who are ready to hide their talents because of social pressures.

The origins of gender differences in nongifted children are not well understood either, although the possibility is strong that biological and temperamental factors play some role in the greater socialization interests of young girls and the more rambunctious, competitive, and instrumentally oriented behavior of young boys. Sex differences in children emerge at a very early age; toddler girls and boys choose different toys (Smith & Daglish, 1977) and even 2 1/2-year-old boys and girls show very different play patterns and preferences (Jacklin & Maccoby, 1978). Among gifted preschoolers, there are few studies of sex differences, but, as early as ages 3-5, boys and girls show differences in spatial reasoning (for example, identifying pictures that have been rotated from the vertical) (Stillman, 1982). Although there are surprisingly few differences in the ways parents deal with their boys and girls, in North America, both parents do tend to encourage sex-typed activities for boys and girls, and greater dependence in girls (Lytton & Romney, 1991). It is particularly important, then, that parents of young, gifted girls encourage them to "think big," to engage in physical activity and teamwork as boys do, and to see themselves as

competent and independent. It is unclear whether the female adolescent/young adult malady of withdrawal from the competitive arena really has its onset during the preschool years and, if so, what the cure(s) might be, but it is certainly clear that gifted girls later on pay a significant price in terms of their ultimate attainment (Arnold, 1993; Kerr, 1985).

Will Precocious Young Children Remain Gifted in the Long Run?

As we have already mentioned with respect to the hazards of testing very young children, the course of development is not highly predictable. Indeed, the earlier the prediction, the longer-term the prediction (which college should my preschooler aim for?), and the higher the scores to begin with, the less dependable is the estimate likely to be (McCall, Appelbaum, & Hogarty, 1973). Long-term predictions for young, gifted children, therefore, lose on all three counts.

So far, no one has selected a group of preschool gifted children and followed them for a long period of time, but there are a few shorter-term longitudinal studies of interest. In one such study (Robinson et al., 1990; Dale et al., under review), a group of toddlers selected by 18 months of age for their precocious language were followed through kindergarten. These children tended to maintain their verbal advantage over the 5-year period. They did not turn out to be early readers, but once they did begin, they advanced rapidly to being excellent readers. On the other hand, Jackson (1992) and her colleagues have studied children who read at a very early age. They and others have shown that even though not all of these early readers were high in general intelligence, on average they were quite bright. Once they entered elementary school, they tended to retain considerable advantage over their classmates in reading skill, word recognition giving way to advanced comprehension as the most distinguishing feature of their competence.

When one looks at scores on intelligence tests, the picture is rather mixed. When children are identified by their parents as advanced in one or more areas and then given developmental measures, as a group their high scores tend to persist over a period of years, even though individual scores vary up or down (Robinson & Robinson, 1992). Giftedness in the very young is too complex to be identified by developmental examinations alone, however; infants and preschoolers selected simply for their high scores, without adult confirmation, do not seem to maintain their advantage (Shapiro et al., 1989; Willerman & Fiedler, 1974, 1977). It is behavior in the real world that counts.

It is unwise to place too much emphasis on test scores, as we have seen. Aside from the unreliability of the scores, which we have discussed, there are other factors to consider. For one thing, some children's talents, such as music, art, or dramatic play, are not represented at all on broad developmental tests, especially those that emphasize cognitive problem-solving skills. For another, some children with early advanced reasoning skills later on become more intensely focused in one or a few domains, so that their overall scores decrease although their talent, commitment, and performance may become very impressive.

What does this add up to in terms of parents' planning for young, gifted children? The answers to this question are not easy. Here are some rules of thumb, derived as much from clinical experience as from research:

- The most important focus of parents should be on the present, on responding to their children and their current needs and predilections, on supporting and expanding their interests and on giving them enough challenges that they think of themselves as girls and boys who "like hard things and new things."

- Children who are dramatically advanced during the preschool years are unlikely ever to seem "average" later on, though their advancement may or may not remain equally dramatic.

- As parents plan for their children's entry to school, looking for and/or advocating for a challenging and flexible setting should be a high priority; even at an early age, lack of stimulation can be deadly for development. Bright children who are underchallenged are much more likely to appear "average"—both voluntarily and involuntarily—later on.

- Given the high ability seen in the early years, the most important factors determining whether children will maintain their momentum are probably high motivation, high aspirations, intellectual courage, and the willingness to be creative, to try something that may not work (and to survive if it doesn't). The seeds for these attitudes can be sown during the early years, and it is therefore most important during these years that children grow confident of their abilities to cope with challenge. Although gifted young children may engage in social comparisons somewhat earlier than other children, beginning to judge themselves by the performance of peers in addition to their own expectations, in general, little children are more hedonistic, driven primarily by whether something feels good. It is important during these years that, among the things that "feel good" are some that take effort to master, and that adults recognize and support that effort, rather than only the quality of what the child actually accomplishes.

When Should My Child Enter Elementary School?

In order to achieve an appropriate school placement for a bright child, one option for some gifted young children is early entry to kindergarten or first grade. Although it is wise to be conservative about such decisions (this one is relatively difficult to undo later on), this option has many advantages for children who have already mastered most of what their preschool or kindergarten would have to offer. Early entry can provide, to a degree, greater intellectual stimulation for children who would be bored with a program that satisfies other children of their age. For children who are ready, it provides an option much more natural and less disruptive than skipping a grade later on. There is plenty of evidence that bright children carefully selected for early entrance tend to do very well indeed, both academically and socially over the entire era of their education (Robinson & Weimer, 1991).

What criteria should one use? Ordinarily, children should have a birthdate no more than a few months, six at most, from the ordinary cut-off date and, in most domains, should have at least average to above-average maturity and skills in comparison to the classmates they will have. They should show strong advancement in general intelligence, possess fine motor skills enabling them to keep up with the class, and be relatively mature in social and emotional characteristics. To enter first grade early, they should also be well

on their way to reading and calculating (otherwise the early school curriculum will, in fact, have something to offer them).

Local conditions are highly relevant. In some communities, children with summer birthdays are typically kept out of school, so the average age of classmates is high. Often, these are the communities in which families have high educational levels, and their schools may be both more challenging and flexible. In other communities, the average achievement of potential classmates may be lower, and early entry may be the only attractive alternative. For a detailed discussion of the factors that might enter such a decision, see Robinson and Weimer (1991).

Why, then, is there so much resistance to the idea of children's entering school early? Part of the resistance comes from educators and others who "know (average) children," and, on faith, believe that, for social-emotional reasons, placement with one's agemates is of the highest priority. They are unaware how many gifted children prefer older friends and can hold their own with them. Some resistance also comes from extensive "scientific evidence" comparing the attainment and adjustment of the youngest children in classes with the oldest ones. These children have not been selected for ability but for birthdate, and of course they are less mature than their older classmates, a finding that has been reproduced faithfully by a long series of investigators (Jones & Southern, 1991). One must be careful to pick relevant scientific studies, not irrelevant ones!

This is a serious decision, not to be taken lightly, and consultation with professionals is not only advisable but required by most school districts. Parents need, however, to be sure that the professionals they consult have not already pre-judged the issues, but will look thoughtfully and open-mindedly at the individual child and his or her family and school settings.

Where Can I Turn for Help?

Every parent's questions are different, and every community is different in the resources it offers. It is useful to sit down with pencil and paper to list potential resources one might have missed. Larger communities may offer specialized private preschools or programs connected with community colleges for gifted children, as well as academically challenging public and independent kindergartens; institutions such as science centers, zoos, aquariums, and museums; music, dance, drama, foreign language, sports, and art classes; psychologists, educational consultants, physicians, and others who have special experience with bright and talented children; parenting classes and parent support/advocacy groups and associations.

But even very small communities are likely to offer resources, sometimes in unlikely places. A gifted child may, for example, be given the opportunity to play with children who are a little older, in private homes, playgrounds, church groups, and the like. Almost every community has a library, and a sympathetic librarian can be an invaluable resource to both parents and children. A young child with some talent in music, art, or dance does not need a high-powered teacher, but rather someone who enjoys children and is warmly encouraging. A neighbor who has a special hobby or talent, or who speaks a language other than English, might be engaged as an informal tutor.

Through contact with schools and state organizations, parents of gifted children can often locate each other and/or feel empowered to start a parent support and advocacy group themselves. Parents do, indeed, need to take the initiative, beginning during their child's

early years but continuing throughout their school education. This is a good time to start! A handful of families might, for example, begin a cooperative play group for their own children; sometimes a faculty member in the education or family life department of a nearby community college can offer support.

Finally (actually, first of all), parents should look with an appreciative eye at their own talents and interests and what these can contribute to the life of their child. Remember that Bloom (1985) and his colleagues found that world-class achievers had often initially found their niche through participation in family activities. It takes special patience and tolerance to introduce a child to activities at which an adult is even moderately expert, especially if the child turns out not to be talented in that area. Activities need to be planned from the child's point of view. (Backpacking parents might think of a hike they could cover in 5 or 10 minutes as sufficient for a toddler who likes puddles, flowers, and bugs, and who may take over an hour to cover the same ground.)

Following the research references quoted in this text are a sampling of books for parents and teachers. Compared with their agemates, gifted children often "use up" ideas and activities at a rapid rate, exploiting each for what it can teach and then moving on. This is why the pace of the typical preschool is usually too slow for them. Even the most creative parent will usually need fresh input of ideas in planning activities that do more than just keep children busy, activities that work around a knowledge base and encourage the development of ideas in a reasonably systematic way.

It is, then, not just resources for children that parents and teachers need, but resources for themselves. Bright children are full of questions adults may not be prepared to answer. Depending on the child's interests, it may be worth investing in some adult informational books such as science and nature books, the-way-things-work books, how-to books, and so on that serve as ready references as new questions emerge (with the adult interpreting material in a way the child can understand it). Looking things up together provides a valuable lesson for children that there are ways to find out answers when you don't know them.

A Final Word

Parenting the very young child who shows advancement is a joy and a challenge. No parent does everything right, and when a child is different from others, and consequently the usual guidelines don't apply, the difficulty of the job is increased. Be prepared to deal wisely with:

- Your own wish that your child were "average." Remember that failure to accept the nature of your child's "gift" can be as damaging as if you were to reject a child because of any other difference, such as mental retardation. Parents play with the hand they are dealt.

- Developmental timetables. Keep an open mind about when it is "proper" to develop new skills of thinking and doing. Listen to and observe your own child! Help other adults to look beyond their own conceptions of what children are like when they deal with your child.

- Well meaning neighbors and friends who berate you for "pushing" your child. Tell them the truth: You are running to keep up!

- Family priorities. Gifted children have needs, but so do their parents, siblings, and teachers. Keep a reasoned eye on the pressures you feel, and find ways to keep a sense of balance. There is no gift you can give any child that is as valuable as an optimistic, energetic, and joyful view of today and tomorrow. Do not wear everyone out with scheduled activities; do not so stress the family budget to purchase a computer or pay for special programs that there are insufficient resources to pursue other goals. Above all, do not play favorites among your children by spending a disproportionate amount of time with the one or more whom you see as gifted. Teach each of your children that you will do your best, in the context of your resources, to meet their needs. This does not mean that you must treat each just alike, any more than you would buy all the children the same size shoes, but it does mean that one child doesn't deserve fancier shoes than another because that child is somehow pre-eminent—especially not at this age. Later on, if your child develops all that it takes to be a potentially world-class performer, the family may decide to change its priorities (Bloom, 1985), but not during the early years.

- The fact that, for children who are different, there is no perfect solution to all the issues involved. The choices you make throughout a gifted child's life will be a series of compromises. Our society, our schools, our resources are largely directed toward children whose development is average or even below average. Your job is to try to optimize the balance of advantages to disadvantages for your child, not somebody else's, and the options you choose may be different than those of another parent. No choice that you make will be perfect for a child who does not fit the norm. Doing the best you can and, at the same time giving yourself permission simply to enjoy your child, is plenty good enough.

GUIDELINES FOR PARENTS OF YOUNG, GIFTED CHILDREN

Guideline 1: Gifted children show one or more abilities ahead of their peers by at least one-fourth their age. Although parents often describe them as having excellent memories, vocabularies, attention spans, imagination, and curiosity, no unique characteristic or "giftedness factor" has been identified. In metacognition, the ability to observe and manage one's own thinking, however, they may be especially advanced.

Research support: Gifted children are, in the areas of their talents and interests, more like older children than age-peers. They prefer older friends, have fears and make jokes like older children. In problem-solving, however, young gifted children act more like older gifted children (e.g., pacing themselves to maintain a challenge) than like older children of average mental abilities.

Guideline 2: Parenting gifted young children is labor-intensive.

Research support: Parents report spending more time with gifted young children in reading, playing, making up rhymes and songs, and going to interesting places than do parents of non-gifted young children.

Guideline 3: Some roots of high motivation and willingness to take creative risks can be found during early childhood.

Research support: Precursors of continuing motivation and creativity can be seen in parents' encouragement of initiative, independence, attempting the new or difficult, and seeing each try's outcome as a step to the next.

Guideline 4: We have no strong evidence that special preschools, early teaching, or computer technology significantly advance the development of gifted children.

Research support (or its absence): Rigorous research has not been undertaken that could demonstrate significant long-term effects of such early programs. There is, however, abundant observational evidence that gifted young children are happier with an *optimal match* between their opportunities and their rapid pace of development.

Guideline 5: Gifted children clearly identified during the preschool era tend to stay ahead of other children even if not quite so dramatically as before.

Research support: Longitudinal studies of preschoolers identified for their early-emerging abilities (not just high test scores) find that they do maintain long-range momentum, even though it may not be as dramatic as when first seen. Early entrance to school is, therefore, one way to meet the needs of some gifted children.

Guideline 6: Gifted children are at least as varied as any other group of children.

Research support: Gifted children differ in the patterns of their abilities and skills, as well as their temperaments, personalities, and backgrounds.

References

Abelman, R. (1992). *Some children under some conditions: TV and the high potential kid.* Research-based Decision Making Series, #9205. Storrs, CT: The National Research Center on the Gifted and Talented.

Abroms, K.I. (1982a). Classroom interactions of gifted preschoolers. *Teaching Exceptional Children*, May, 223-225.

Abroms, K.I. (1982b). The gifted infant: Tantalizing behaviors and provocative correlates. *Journal of the Division for Early Childhood, 5*, 3-18.

Abroms, K.I., & Gollin, J. (1980). Developmental study of gifted preschool children and measures of psychosocial giftedness. *Exceptional Children, 46*, 334-341.

Albert, R.S. (1980). Family positions and the attainment of eminence: A study of special family positions and special family experiences. *Gifted Child Quarterly, 24*, 87-95.

Arnold, K. (1993). Academically talented women in the 1980's: The Illinois Valedictorian Project. In K.D. Hulbert & D.T. Schuster (Eds.). *Women's lives through time* (pp. 393-414). San Francisco: Jossey Bass.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review, 84*, 191-215.

Barnett, L., & Fiscella, J. (1985). A child by any other name: A comparison of the playfulness of gifted and nongifted children. *Gifted Child Quarterly, 29*, 61-66.

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs, 4* (1, Part 2.)

Bee, H.L., Van Egeren, L.F., Streissguth, A.P., Nyman, B.A., & Leckie, M.S. (1969). Social class differences in maternal teaching strategies and speech patterns. *Developmental Psychology, 1*, 726-734.

Birns, B., & Golden, M. (1972). Prediction of intellectual performance at 3 years from infant tests and personality measures. *Merrill Palmer Quarterly, 18*, 53-58.

Bloom, B.S. (Ed.). (1985). *Developing talent in young people*. New York: Ballantine.

Bornstein, M.H. (1989). Stability in early mental development: From attention and information processing in infancy to language and cognition in childhood. In M.H. Bornstein & N.A. Krasnegor (Eds.), *Stability and continuity in mental development: Behavioral and biological perspectives* (pp. 147-170). Hillsdale, NJ: Erlbaum.

Bradway, K.P., & Robinson, N.M. (1961). Significant IQ changes in twenty-five years: A follow-up. *Journal of Educational Psychology, 53*, 1-14.

Brown, A.L. (1973). Conservation of number and continuous quantity in normal, bright, and retarded children. *Child Development, 44*, 376-379.

Carter, T.M. (1958). The play problems of gifted children. *School and Society, 86*, 224-225.

Clarke-Stewart, K.A. (1973). Interactions between mothers and their young children: Characteristics and consequences. *Monographs of the Society for Research in Child Development, 38* (6-7, Serial No. 153).

Cox, C.M. (1926). *Genetic studies of genius. Vol. 2: The early mental traits of three hundred geniuses.* Stanford, CA: Stanford University Press.

Crain-Thoreson, C., & Dale, P.S. (1992). Do early talkers become early readers? Linguistic precocity, preschool language, and emergent literacy. *Developmental Psychology, 28*, 421-429.

Crain-Thoreson, C., & Dale, P.S. (in press). Pronoun reversals: Who, when, and why? *Journal of Child Language.*

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). *Talented teenagers: The roots of success and failure.* Cambridge, UK: Cambridge University Press.

Dale, P.S., Crain-Thoreson, C., & Robinson, N.M. (under review). Follow-up of verbally precocious children: A final report.

DeVries, R. (1974). Relationships among Piagetian, IQ, and achievement assessments. *Child Development, 43*, 746-756.

Draper, T.W., Larsen, J.M., Harris, J., & Robinson, C.C. (1992, March). *Interrelationships between preschool attendance, parent education, parental expectations and behaviors, and child behaviors and attributes in high IQ children in an advantaged subculture.* Paper presented at the Esther Katz Rosen Symposium on the Psychological Development of Gifted Children, Lawrence, KS.

Dweck, C.S., & Elliott, E.S. (1983). Achievement motivation. In E.M. Hetherington (Ed.), *Handbook of child psychology: Socialization, personality, and social development* (Vol. 4, 4th ed., pp. 343-391). New York: Wiley.

Fagan, J.F., III (1985). A new look at infant intelligence. In D.K. Detterman (Ed.), *Current topics in human intelligence. Vol. I: Research methodology.* Norwood, NJ: Ablex.

Feldman, D.H., with Goldsmith, L. (1986). *Nature's gambit: Child prodigies and the development of human potential.* New York: Basic Books.

Field, T.M. (1991). Quality infant day-care and grade school behavior and performance. *Child Development, 62*, 863-870.

Flavell, J.H. (1963). *The developmental theory of Jean Piaget.* Princeton, NJ: Van Nostrand.

Flavell, J., Miller, P., & Miller, S. (1993). *Cognitive development*, 3rd ed. Englewood Cliffs, NJ: Prentice Hall.

Fowler, W. (1981). Case studies of cognitive precocity: The role of exogeneous and endogenous stimulation in early mental development. *Journal of Applied Developmental Psychology, 2*, 319-367.

Fowler, W. (1992, March). *The influence of early language stimulation on the short and long term development of abilities: Identifying abilities through educational intervention*. Paper presented at the Esther Katz Rosen Symposium on the Psychological Development of Gifted Children, Lawrence, Kansas.

Freeburg, N.E., & Payne, D.T. (1967). Parental influence on cognitive development in early childhood. *Child Development, 38*, 65-87.

Galton, F. (1869). *Hereditary genius: An inquiry into its laws and consequences*. London: Macmillan.

Geppert, U., & Kuster, U. (1983). The emergence of "wanting to do it oneself": A precursor of achievement motivation. *International Journal of Behavioral Development, 6*, 355-365.

Goertzel, M., Goertzel, V., & Goertzel, T. (1978). *300 eminent personalities*. San Francisco, CA: Jossey-Bass.

Hanninen, G.E. (1984). Effectiveness of a preschool program for the gifted and talented. *Journal for the Education of the Gifted, 7*, 192-204.

Hanson, I. (1984). A comparison between parent identification of young bright children and subsequent testing. *Roeper Review, 7*, 44-45.

Harper, L.V., & Huie, K.S. (1987). Relations among preschool children's adult and peer contacts and later academic achievement. *Child Development, 58*, 1051-1065.

Henderson, V.L., & Dweck, C.S. (1990). Motivation and achievement. In S.S. Feldman & G.R. Elliot (Eds.), *At the threshold: The developing adolescent*. Cambridge, MA: Harvard University Press.

Hess, R.D., & Shipman, V.C. (1969). Early experience and the socialization of cognitive modes in children. *Child Development, 36*, 869-886.

Hewitt, P.L., & Flett, G.L. (1990). Perfectionism and depression: A multidimensional analysis. *Journal of Social Behavior and Personality, 5*, 423-438.

Ho, W-C. (Ed.). (1989). *Yani: The brush of innocence*. New York: Hudson Hills Press.

Honzik, M.P., Macfarlane, J.W., & Allen, L. (1948). The stability of mental test performance between two and eighteen years. *Journal of Experimental Education, 17*, 309-324.

Hunt, D., & Randhawa, B. (1980). Personality factors and ability groups. *Perceptual and Motor Skills, 50*, 902.

Jacklin, C.N., & Maccoby, E.E. (1978). Social behavior at 33 months in same-sex and mixed-sex dyads. *Child Development, 49*, 557-569.

Jackson, N.E. (1992). Precocious reading of English: Origins, structure, and predictive significance. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 171-203). Norwood, NJ: Ablex.

Jackson, N.E., & Butterfield, E.C. (1986). A conception of giftedness designed to promote research. In R.J. Sternberg & J.E. Davidson (Eds.). *Conceptions of giftedness* (pp. 151-181). Cambridge, UK: Cambridge University Press.

Jackson, N.E., & Roller, C.M. (1993). *Reading with young children.* Research-Based Decision Making Series #9302. Storrs, CT: The National Research Center on the Gifted and Talented.

Janos, P.M., & Robinson, N.M. (1985). Psychosocial development in intellectually gifted children. In F.D. Horowitz & M. O'Brien (Eds.). *The gifted and talented: A developmental perspective* (pp. 149-195). Washington, DC: American Psychological Association.

Jones, E.D., & Southern, W.T. (1991). Objections to early entrance and grade skipping. In W.T. Southern & E.D. Jones (Eds.) *The academic acceleration of gifted children* (pp. 51-73). New York: Teachers College Press.

Kanevsky, L. (1992). The learning game. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 204-241). Norwood, NJ: Ablex.

Kanevsky, L., & Rapagna, S.O. (1990). Dynamic analysis of problem solving by average and high ability children. *Canadian Journal of Special Education, 6,* 15-30.

Kaplan, C. (1992). Ceiling effects in assessing high-IQ children with the WPPSI-R. *Journal of Clinical Child Psychology, 21,* 403-406.

Karnes, M.B. (Ed.). (1983). *The underserved: Our young gifted children.* Reston, VA: Council for Exceptional Children.

Karnes, M.B., Shwedel, A.M., & Lewis, G.F. (1983a). Short-term effects of early programming for the young gifted handicapped child. *Exceptional Children, 50,* 103-109.

Karnes, M.B., Shwedel, A.M., & Lewis, G.F. (1983b). Long-term effects of early programming for the gifted/talented handicapped. *Journal for the Education of the Gifted, 6,* 266-278.

Karnes, M.B., Shwedel, A.M., & Steinberg, D. (1984). Styles of parenting among parents of young gifted children. *Roeper Review, 6,* 232-235.

Kaufman, A.S. (1992). Evaluation of the WISC-III and WPPSI-R for gifted children. *Roeper Review, 14,* 154-158.

Kerr, B. (1985). *Smart girls, gifted women.* Columbus, OH: Ohio Psychology Publishing.

Kitano, M.K. (1985). Ethnography of a preschool for the gifted: What gifted young children actually do. *Gifted Child Quarterly, 29,* 67-71.

Klein, P.S. (1992). Mediating the cognitive, social, and aesthetic development of precocious young children. In P.S. Klein & A. Tannenbaum (Eds.) *To be young and gifted* (pp. 245-277). Norwood, NJ: Ablex.

Klene, R. (1988, August). *The occurrence of fears in gifted children.* Paper presented at the annual meeting of the American Psychological Association, Atlanta, GA.

Kohn, M., & Rosman, B.L. (1972). Relationship of preschool social-emotional functioning to later intellectual achievement. *Developmental Psychology, 6,* 445-452.

Krinsky, R., Jackson, N.E., & Robinson, H.B. (1977). Analysis of parent information on the identification of precocious intellectual development in young children. In H.B. Robinson, N.E. Jackson, & W.C. Roedell. *Identification and nurturance of extraordinarily precocious young children: Annual report to the Spencer Foundation.* Seattle: University of Washington, Child Development Research Group. (ERIC ED 151 095)

Kulieke, M.J., & Olszewski-Kubilius, P. (1989). The influence of family values and climate on the development of talent. In J.L. VanTassel-Baska & P. Olszewski-Kubilius (Eds.) *Patterns of influence on the gifted learner: The home, the self, and the school* (pp. 40-59). New York: Teachers College Press.

Leithwood, K.A. (1971). Motor, cognitive and affective relationships among advantaged preschool children. *Research Quarterly, 42,* 47-53.

Lempers, J., Block, L., Scott, M., & Draper, D. (1987). The relationship between psychometric brightness and cognitive-developmental precocity in gifted preschoolers. *Merrill Palmer Quarterly, 33,* 489-503.

Lewis, M., & Louis, B. (1991). Young gifted children. In N. Colangelo & G.A. Davis (Eds.), *Handbook of gifted education* (pp. 365-381). Boston: Allyn & Bacon.

Little, A. (1972). A longitudinal study of cognitive development in young children. *Child Development, 43,* 1024-1034.

Louis, B., & Lewis, M. (1992). Parental beliefs about giftedness in young children and their relation to actual ability level. *Gifted Child Quarterly,* 36, 27-31.

Lovecky, D.V. (1992). Exploring social and emotional aspects of giftedness in children. *Roeper Review, 15,* 18-25.

Lytton, H., & Romney, D.M. (1991). Parents' differential socialization of boys and girls: A meta-analysis. *Psychological Bulletin, 109,* 267-296.

McCall, R.B., Appelbaum, M.I., & Hogarty, P.S. (1973). Developmental changes in mental performance. *Monographs of the Society for Research in Child Development, 38* (Serial No. 150).

McCall, R.B., & Carriger, M.S. (1993). A meta-analysis of infant habituation and recognition memory performance as predictors of later IQ. *Child Development, 64,* 57-79.

McClelland, D., Atkinson, J., Clark, R., & Lowell, E. (1953). *The achievement motive*. New York: Appleton-Century-Crofts.

McCurdy, H. (1960). The childhood patterns of genius. *Horizon*, *2*(5), 33-38.

McGuffog, C., Feiring, C., & Lewis, M. (1987). The diverse profile of the extremely gifted child. *Roeper Review*, *10*, 82-89.

Miles, C.D. (1954). Gifted children. In L. Carmichael (Ed.), *Manual of child psychology* (2nd ed., pp. 984-1063). New York: Wiley.

Moore, L.C., & Sawyers, J.K. (1987). The stability of original thinking in young children. *Gifted Child Quarterly*, *31*, 126-129.

Moran, J.D., III, Milgram, R.M., Sawyers, J.K., & Fu, V.R. (1983). Original thinking in preschool children. *Child Development*, *54*, 921-926.

Moss, E. (1990). Social interaction and metacognitive development in gifted preschoolers. *Gifted Child Quarterly*, *34*, 16-20.

Moss, E. (1992). Early interactions and metacognitive development of gifted preschoolers. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 278-318). Norwood, NJ: Ablex.

Moss, E., & Strayer, F.F. (1990). Interactive problem-solving of gifted and non-gifted preschoolers with their mothers. *International Journal of Behavioral Development*, *13*, 177-197.

Ochse, R. (1990). *Before the gates of excellence: The determinants of creative genius*. Cambridge, England: Cambridge University Press.

Parsons, J.E., Adler, T.F., & Kaczala, C.M. (1982). Socialization of achievement attitudes and beliefs: Parental influences. *Child Development*, *53*, 310-321.

Planche, P. (1985). Modalites fonctionnelles et conduites de resolution de problems chez des enfants precocious de cinq, six et sept ans d'age chronologique. (Functional modalities and problem solving in gifted children five, six, and seven years old.) *Archives de Psychologie*, *53*, 411-415.

Plomin, R., & Daniels, D. (1987). Why are children within the family so different from each other? *The Brain and Behavioral Sciences*, *10*, 1-16.

Porath, M. (1992). Stage and structure in the development of children with various types of "giftedness." In R. Case (Ed.), *The mind's staircase: Exploring the conceptual underpinnings of children's thought and knowledge*. Hillsdale, NJ: Erlbaum.

Radford, J. (1990). *Child prodigies and exceptional early achievers*. New York: Free Press.

Renzulli, J.S. (1978). What makes giftedness? Reexamining a definition. *Phi Delta Kappan*, *60*, 18-24.

Rimm, S.B. (1986). *Underachievement syndrome: Causes and cures*. Watertown, WI: Apple Publishing.

Robinson, N.M. (1992). Which Stanford-Binet for the brightest? Stanford-Binet IV, of course! *Roeper Review, 15*, 32-34.

Robinson, N.M. (1993). Identifying and nurturing gifted, very young children. In K.A. Heller, F.J. Monks, & A.H. Passow (Eds.), *International handbook for research on giftedness and talent*, pp. 507-524. Oxford, UK: Pergamon.

Robinson, N.M., Dale, P.S., & Landesman, S. (1990). Validity of Stanford-Binet IV with linguistically precocious toddlers. *Intelligence, 14*, 173-186.

Robinson, N.M., & Noble, K.D. (1991). Social-emotional development and adjustment of gifted children. In M.G. Wang, M.C. Reynolds, & H.J. Walberg (Eds.), *Handbook of special education: Research and Practice*, Vol. 4 (pp. 23-36). New York: Pergamon.

Robinson, N.M., & Robinson, H.B. (1992). The use of standardized tests with young gifted children. In P.S. Klein & A. Tannenbaum (Eds.), *To be young and gifted* (pp. 141-170). Norwood, NJ: Ablex.

Robinson, N.M., & Weimer, L.J. (1991). Selection of candidates for early admission to kindergarten and first grade. In W.T. Southern & E.D. Jones (Eds.), *The academic acceleration of gifted children* (pp. 29-50). New York: Teachers College Press.

Roedell, W.C., Jackson, N.E., & Robinson, H.B. (1980). *Gifted young children*. New York: Teachers College Press.

Shapiro, B.K., Palmer, F.B., Antell, S.E., Bilker, S., Ross, A., & Capute, A.J. (1989). Giftedness: Can it be predicted in infancy? *Clinical Pediatrics, 28*, 205-209.

Shigaki, I.S., & Wolf, W. (1982). Comparison of class and conditional logic abilities of gifted and normal children. *Child Study Journal, 12*, 161-170.

Silverman, L.K., Chitwood, D.G., & Waters, J.L. (1986). Young gifted children: Can parents identify giftedness? *Topics in Early Childhood Special Education, 6*(1), 23-38.

Silverman, L.K., & Kearney, K. (1992). The case for the Stanford-Binet L-M as a supplemental test. *Roeper Review, 15*, 34-37.

Simonton, D.K. (1988.) *Scientific genius*. Cambridge, UK: Cambridge University Press.

Simonton, D.K. (in press). Gifted child - Genius adult: Three life-span developmental perspectives. In R. Jenkins-Friedman and F.D. Horowitz (Eds.), *Life-span research on gifted and talented children and youth*. Washington, DC: American Psychological Association.

Smith, P.K., & Daglish, L. (1977). Sex differences in parent and infant behavior in the home. *Child Development, 48*, 1250-1254.

Sontag, L.W., Baker, C.T., & Nelson, V.L. (1958). Mental growth and personality development: A longitudinal study. *Monographs of the Society for Research in Child Development, 23* (2, Serial No. 68).

Spitz, H.H. (1985). Extreme decalage: The task by intelligence interaction. In E.D. Neimark, R. De Lisi, & J.L. Newman (Eds.), *Moderators of competence* (pp. 117-145). Hillsdale, NJ: Erlbaum.

Sternberg, R.J. (Ed.). (1988). *The nature of creativity*. Cambridge, UK: Cambridge University Press.

Sternberg, R.J., & Davidson, J.E. (Eds.). *Conceptions of giftedness*. Cambridge, UK: Cambridge University Press.

Stillman, C.M. (1982). *Individual differences in language and spatial abilities among young gifted children*. Unpublished doctoral dissertation, University of Washington.

Stipek, D., Daniels, D., Milburn, S., & Feller, R. (1993, March). *Early childhood education program effects on children*. Paper presented at the biannual meetings of the Society for Research in Child Development, New Orleans.

Strang, R. (1951). Mental hygiene of gifted children. In P. Witty (Ed.), *The gifted child*. Lexington, MA: D.C. Heath.

Tannenbaum, A. (1992). Early signs of giftedness: Research and commentary. *Journal for the Education of the Gifted, 15*, 104-133.

Terman, L.M. (1926). *Genetic studies of genius. Vol. I: Mental and physical traits of a thousand gifted children*. (2nd ed.). Stanford, CA: Stanford University Press.

Terman, L.M., & Oden, M.H. (1947). *Genetic studies of genius. Vol. IV: The gifted child grows up*. Stanford, CA: Stanford University Press.

Thomas, B. (1984). Early toy preferences of four-year-old readers and nonreaders. *Child Development, 55*, 424-430.

Trudewind, C. (1982). The development of achievement motivation and individual differences: Ecological determinants. *Review of Child Development Research* (Vol. 6). Chicago: University of Chicago Press.

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Whitmore, J.R. (1980). *Giftedness, conflict, and underachievement*. Boston: Allyn & Bacon.

Willerman, L., & Fiedler, M.F. (1974). Infant performance and intellectual precocity. *Child Development, 45*, 483-486.

Willerman, L., & Fiedler, M.F. (1977). Intellectually precocious preschool children: Early development and later intellectual accomplishments. *Journal of Genetic Psychology, 131*, 13-20.

Zha, Z. (1984). A comparative study of the analogical reasoning of 3 to 6-year-old supernormal and normal children. *Acta Psychologica Sinica, 16*, 373-382.

Zhensun, Z., & Low, A. (1991). *A young painter: The life and paintings of Wang Yani, China's extraordinary young artist.* New York: Scholastic.

Zuckerman, H. (1979). *The scientific elite: Nobel laureates' mutual influences.* Detroit: Free Press.

Resources: Books for Parents and Teachers

Abelman, R. (1992). *Some children under some conditions: TV and the high potential kid.* Storrs, CT: The National Research Center on the Gifted and Talented, The University of Connecticut. (Research-Based Decision Making Series, #9205). This summary of research includes valuable strategies for making the most of this valuable resource.

Alvino, J., and the Editors of *Gifted Children Monthly* (1985). *Parents' guide to raising a gifted child: Recognizing and developing your child's potential.* New York: Little, Brown. Probably the best single resource for ideas about parenting the school-aged gifted child, largely school-oriented but including a number of significant within-family ideas, as well as lists of materials, games, and books for children.

Ames, L.B., & Chase, J.A. (1981). *Don't push your preschooler, Rev. ed.* New York: Harper and Row. Despite the title of this book, it makes a useful distinction between trying to create a gifted child, and responding to one who is indeed a gifted learner. Many positive suggestions.

Ames, L.B., & Ilg, F. (1976-). *Your one-year-old...Your ten-to-fourteen-year-old.* New York: Dell Publishing. A series of books about children of specific ages, full of practical advice and psychological insights, with appendices on toys and books for children and books for parents.

CTY/Johns Hopkins University. *Sourcebook for parents of intellectually gifted preschool/elementary school children.* Baltimore, MD: CTY/JHU. 3400 N. Charles Street, Baltimore 21218 (410-516-8427). A collection of articles and resources, preponderantly for school-aged children but some for parents of younger children as well.

Editors of *Gifted Children Monthly* and Alvino, J. (1989). *Parents' guide to raising a gifted toddler.* New York: Little, Brown. Unfortunately, this useful book went quickly out of print, but you may find it in your library.

Jackson, N.E., & Roller, C.M. (1993). *Reading with young children.* Storrs, CT: The National Research Center on the Gifted and Talented, The University of Connecticut. (Research-Based Decision Making Series #9302).

Klein, P.S., & Tannenbaum, A. (Eds.). (1992). *To be young and gifted.* Norwood, NJ: Ablex. This book is intended for researchers, not parents, but is one of very few books that focuses on the very young, gifted child.

Robinson, N.M., & Weimer, L.J. (1991). Selection of candidates for early admission to kindergarten and first grade. In W.T. Southern & E.D. Jones (Eds.), *The academic acceleration of gifted children* (pp. 29-50). New York: Teachers College Press. A consideration of the many issues parents and professionals need to take into account in making this important decision.

Roedell, W.C. (1989). Early development of gifted children. In J.L. VanTassel-Baska & P. Olszewski-Kubilius (Eds.), *Patterns of influence on gifted learners: The home, the self, and the school* (pp. 13-28). New York: Teachers College Press.

Roedell, W.C., Jackson, N.E., & Robinson, H.B. (1980). *Gifted young children.* New York: Teachers College Press. While not new, this book covers many of the major issues about this age group.

Saunders, J., with P. Espeland (1991). *Bringing out the best (Rev.)* Minneapolis: Free Spirit Publishing. Probably the single best resource for parents of young, gifted children, including parenting issues, activities, toys, and other resources. Written engagingly. Beware, though, of the chapter on affecting brain development; it goes too far.

Sher, B.T. (1993). *Notes from a scientist. Resources and activities for gifted children: Some suggestions for parents.* Williamsburg, VA: Center for Gifted Education, The College of William and Mary. Valuable suggestions and resources for encouraging gifted children in their explorations of science.

Smutney, J.F., Veenker, K., & Veenker, S. (1989). *Your gifted child: How to recognize and develop the special talents in your child from birth to age seven.* New York: Ballantine. Full of information for parents as to how to identify advanced development and how to encourage it.

Takacs, C.A. (1986). *Enjoy your gifted child.* Syracuse, NY: Syracuse University Press. Nurturing advice on developmental and emotional areas. Its emphasis is on how to relax and enjoy life with children while keeping up with their developmental needs.

Walker, S.Y. (1991). *The survival guide for parents of gifted kids.* Minneapolis, MN: Free Spirit Publishing. Like other publications from Free Spirit, this is a lively and helpful handbook that addresses issues within the family as much as those intersecting with schools.

Note: There are some popular books by such authors as Doman, White, Engleman, and Beck which assert that, by following their planned program of activities, a child can be made more intelligent. Most have some useful ideas for stimulating activities, but the intensive programs advocated by these writers (particularly Doman) are not in the best interests of children or parents, and no scientific evidence exists for IQ-raising in young children already living in supportive families.

Other Resources

Activity Books. Gifted children tend to use up parents' and teachers' ideas at a rapid rate. There are many activity books available, some just time-wasters to be avoided, and some useful means of teaching new ideas and skills. Parents are advised to browse the library and children's bookstores. Here are two:

Boswell, J., & Barrett, R. (1990). *How to dad.* New York: Dell. Moms are welcome, too. An engaging book about teaching kids skills such as whistling and going headfirst into a pool.

Miller, K. *Things to do with toddlers and twos.* Marshfield, MA: Telshare Publishing.

Book Guides. There are so many fine books for children that guidance can be useful when going to the library or bookstore, although there is no substitute for your own "aha" when you see a book that fits you and your child. Here are some guides:

Baskin, B.H., & Harris, K.H. (1980, 1988). *Books for the gifted child.* (Vols. 1 & 2). New York: R.R. Bowker Co.

Chinaberry Book Service, 2780 Via Orange Way, Suite B, Spring Valley, CA 98978 (1-800-776-2242). This is a commercial catalogue of books, sensitively chosen and reviewed at some length, providing a wide spectrum of trustworthy materials for children and adults.

Halstead, J.W. (1988). *Guiding gifted readers: From preschool through high school. A handbook for parents, teachers, counselors, and librarians.* Columbus, OH: Ohio Psychology Publishing Co.

Lipson, E.R. (1991). *New York Times parent's guide to the best books for children, revised and updated.* New York: Times Books, Random House.

Trelease, J. (1989). *The new read-aloud handbook.* New York: Viking Penguin Books.

Software Guides. Most software catalogues are vending their own products, and are to be read judiciously.

High/Scope Buyer's Guide to Children's Software. High/Scope Press. 600 N. River Street, Ypsilanti, MI 48194-2898.

An annual set of reviews is to be found in Neill, S.B., & Neill, G.W. *Only the best: Annual guide to highest-rated educational software/multimedia for preschool—grade 12.* Carmichael, CA: Education News Service.

Free Spirit Publishing, 4009 First Avenue N., Suite 616, Minneapolis, MN 55401-1724. Self-help for kids. This catalogue includes a number of books for gifted children (mostly older) and parents of gifted children.

Gifted Child Today, P.O. Box 637, Holmes, PA 19043-9937 (800-476-8711). This magazine for parents and teachers, mainly focused on school-aged gifted children, contains articles and reviews of books for children and parents that may be of some interest. Worth examining in your library, at least.

Organizations

National Association for Gifted Children, 1155 15th Street NW, Suite 1002, Washington, D.C. 20005 (202-785-4268). Parents are welcome.

The Association for the Gifted (TAG), Council for Exceptional Children, 1920 Association Drive, Reston, VA 22091. Mainly an association of educators.

Other national organizations of parents and teachers exist, most of them designed for adults who deal with older gifted children. A list may be found in Saunders and Espeland, above. In addition, nearly all states have organizations concerned with gifted children. Some are primarily for educators, but most are for parents and educators. Your state's Department of Education can put you in touch with such organizations. Remember that many parents of school-aged children have younger gifted children as well!

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